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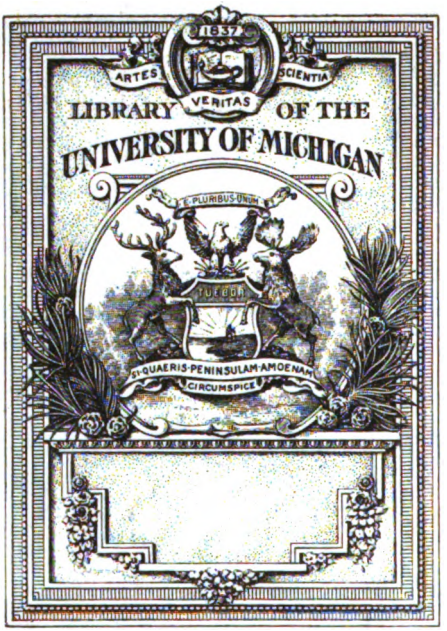

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Original Articles.

LEUKÆMIA AND PREGNANCY.

With Report of a Case.

BY W. W. JAGGARD, M.D.,
Professor of Obstetrics in the Chicago Medical College, and Obstetrician to Mercy Hospital, Chicago.

Read before the Chicago Medical Society, June 16, 1890.

The purpose of this communication is to place on record an example of fatal lienal leukæmia, that seems to have sustained some necessary relation to pregnancy, or to prolonged lactation during pregnancy, or to both these factors.

The notion of some necessary relation between the female generative organs and leukæmia has long been accepted. Thus Virchow,[1] the discoverer of leukæmia, writes on the etiology of the disease: "The only thing that can be asserted with any degree of certainty is the connection with the sexual functions in woman."

And Mosler[2] says: "Disturbances of the sexual functions in woman have an influence in the origin of leukæmia that is

[1] Gesammelte Abhandlungen, Frankfurt, 1856, p. 209.

[2] Die Pathologie und Therapie der Leukämie, Berlin, 1872, p. 113.

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unmistakable. There exists a certain connection between the female genital organs and spleen. An acute splenic tumor with slight increase of the white blood-corpuscles often arises in consequence of anomalies of menstruation."

Within a recent period, however, the nature of the evidence upon which this notion rests has been called in question by Sänger,[3] in an excellent critical review of the literature of the subject. This testimony, he writes, is not the language of modern gynecology.[4] "The question, up to the present surrendered entirely to internal medicine, must be investigated anew by gynecologists, who hitherto have interested themselves in leukæmia and splenic tumors only in their relation to differential diagnosis for the purpose of laparotomy."

It is a fact that leukæmia occurs twice in men to once in women. Among 91 cases Ehrlich found 60 males and 31 females, while among 201 cases Birch-Hirschfeld found 135 males and 66 females. This unequal occurrence exists in spite of, or perhaps on account of, the greater demands on the blood-glandular system of women. Now, if menstrual disturbance, so commonly observed, were always of primary, causal moment, the world would swarm with leukæmics. On the other hand, does it not seem probable that the more active blood-metabolism is the factor that tends to shield the female sex from leukæmia?

On the reciprocal relations of leukæmia and menstruation it can be said that in most cases the menstrual blood-flow is lessened in the course of the disease even to the degree of complete amenorrhœa. Oligomenorrhœa and amenorrhœa, however, are secondary. They arise in consequence of the leukæmic blood-dyscrasia, just as they occur in chloro-anæmia, in the anæmia of obesity, in pulmonary tuberculosis and after severe hæmorrhages. With reference to sudden suppression of the menses, whose causal importance is insisted upon by Mosler, it is more probable that the same pernicious influence that effected the suppression at the same time produced the leukæmia.

It is alleged that among women the climacteric period has the greatest number of cases, and Mosler goes so far as to attach causal significance to the senile retrograde changes in the

[3] Ueber Leukämie bei Schwangeren, etc.

[4] Archiv für Gyn., Bd. xxxiii. H. 2.

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genitalia. But it is irrational to suppose, as he does, in a single case that the numerous severe labors and abortions with considerable loss of blood should first avenge themselves at the menopause instead of immediately upon the reception of the injury. And, in general, it may be remarked that the recorded cases furnish no evidence that can incriminate the change of life.

No evidence whatever has been presented to prove a connection between primary affections of the ovaries and secondary leukæmia. It has been shown, however, that in the course of leukæmia these organs, or their analogues, are sometimes involved. Hérard demonstrated the formation of lymphomata in the ovaries in one case; Robin, in the testicles; Gillot, in the mammary glands.

The coincidence of pregnancy and leukæmia is rare. Still, in the cases of Cameron, Greene and Sänger conception occurred. Accordingly, the conclusion is justified that leukæmia, as such, does not inhibit capability to conceive, but, at the most, limits the function, though even limitation is not probable, since repeated conceptions have been observed in leukæmia.

From these considerations the opinion seems justified that disturbances of menstruation, of ovulation and of conception in leukæmia have either a secondary significance or are entirely independent of the disease.

Turning now to the connection between pregnancy and leukæmia, it seems to me that the evidence in hand does not warrant Sänger's absolute denial of all causal relation.

The history of my case is briefly as follows:

Mrs. F. G., thirty-four years old; born in Boston of German parents; wife of a mechanic; VI.-para. When in health a large, fine-looking woman, five feet four inches in height, one hundred and fifty pounds in weight. Menstruation established in sixteenth year, was regular every four weeks, painless and of three days' duration.

No serious illness during girlhood with the exception of an attack of "inflammation of the bowels" that lasted six weeks during her fourteenth year. No history of syphilis, alcoholism, injury, nor of rheumatism. Patient has lived in Boston, Mass., Milwaukee and Menasha, Wis., and in Chicago, and never suffered from malarial infection.

Married January 12, 1875, while in her twentieth year.

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First child, male, born February 1, 1876, died of cholera infantum when eight months old (Dr. Root's certificate).

Second child, male, born September 7, 1877, nursed sixteen months; living and in health.

Third child, female, born November 12, 1879, nursed sixteen months; living and in health.

Fourth child, male, born May 4, 1882, nursed eighteen months; living and in health.

Fifth child, female, born December 12, 1886, nursed during her sixth pregnancy up to and on the morning of her confinement, July 8, 1888; child is now living and in health.

Sixth child, female, born July 8, 1888, small (premature). This child she was not able to suckle. At the end of the first week the child was artificially fed and died in convulsions at the end of the third week.

All her labors were easy and rapid. She was attended exclusively by a midwife. No miscarriages. With the exception of the sixth all the children large and vigorous. The four survivors, seen and examined June 1, 1890, present every appearance of health.

The course of the sixth pregnancy was normal. Three weeks before the sixth labor patient was a large and apparently healthy woman, with well-developed bust, and weighed one hundred and fifty-eight pounds. At this time she had a photograph taken, because, to use her own words, "she never looked so well."

Sixth puerperium, with the exception of the failure of lactation, was apparently normal. At the end of ten days she was up and at work as usual. At this time she first noticed stinging paroxysmal pains in the region of the left hypochondrium, although no tumor was perceptible. About six weeks after labor, August 22, 1888, menstruation was reëstablished, but was very scanty.

Menstruation for the second and last time, January 2, 1889; scanty.

Pains of a lancinating character in the region of the spleen became more severe, the loss of weight was progressive, and weariness and general malaise became marked. About eight weeks after this labor she first noticed, and called to her husband's attention, a painful lump in the region of the left hypochondrium,

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which seemed to grow in size from week to week. Finally she consulted her physician, Dr. Glenn M. Hammon, of Chicago, who made an examination, January 21, 1889. He writes: "I found a large, densely hard, nodular mass extending downward from the spleen and filling nearly the whole of the left half of the abdominal cavity. It was easily outlined because of the emaciation. There were no other glandular enlargements. There was considerable pain of a lancinating character." The case came under my observation January 31, 1889, and remained under my control for four weeks. Patient greatly emaciated, pulse 116, temperature 100.3° F. Heart, lungs, and liver negative. Urine free from sugar and albumin. Palpation of the abdominal tumor, rendered easy by the disappearance of the panniculus adiposus and by the marked diastasis of the recti, revealed an enormously enlarged spleen that filled out the left half of the abdominal cavity and below the navel extended obliquely to a point near the right iliac fossa. The hilum and the free notched anterior margin were easily outlined. The organ, symmetrically enlarged and immobile, was painful spontaneously and on pressure. There were some ascites and slight œdema of the legs and feet.

Pelvic genitalia absolutely normal.

Lymphatic glands and long bones negative.

A drop of blood, notably viscid, showed an enormous increase of the white corpuscles. The white corpuscles apparently equalled in number the red disks.

Diagnosis.—Leukæmia lienalis.

February 4, 1889, Dr. Frank Billings saw the case with me, and together we made a careful examination of the blood

Blood-count (Hayem's hématimèter).—Red disks, per c.mm., 3,255,000; white corpuscles, per c.mm., 1,178,000; ratio of white to red as 1 : 2.7+.

On account of the viscidity of the fluid, due to the increase of white corpuscles, we encountered difficulty in the estimation of the hæmaglobin by Gowers' instrument. After many trials, however, we were successful, and fixed the quantity at fifty per centum. At this time we went over the history of the case and made a thorough physical examination, but discovered nothing

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new. We detected no enlargement of lymphatic glands, no change in the bones.

Retina not examined.

Family history good. Both parents aged, but in health. Blood of father and only sister (II.-para) upon examination, normal.

Prognosis.—Absolutely unfavorable.

Treatment.—Nutritious food, arsenic, iron, anodynes.

Subsequent course of disease.—February 11. Paroxysms of terrible pain; vomiting large quantities of blood. Diarrhœa; dejecta streaked with blood. Rapid progressive emaciation. Pain always referred to the splenic tumor. Dr. J. M. Hutchinson, of Chicago, who saw the case later, kindly informs me that the paroxysms of terrible pain, always accompanied with violent vomiting, continued, the tumor increased in size, considerable ascites and œdema of the feet and legs developed; and that cachexia and emaciation progressed.

A few days before death patient weighed less than one hundred pounds.

She remained conscious to within three hours of death, which occurred June 27, 1889. Autopsy could not be obtained.

This case presents several points of interest:

1. The certificate returned to the City Board of Health, I am informed, assigns cancer of the spleen as the cause of the death of this woman. Now, as an ingenious figure of speech, it may be permissible to speak of leukæmia as carcinoma of the blood (Bard), or as sarcoma of the blood (Sänger), but it is a gross error to call a leukæmic spleen a cancer. Under adequate microscopical examination of the blood is it not possible that some of the examples of splenic cancer and of ague-cake reported here and elsewhere might be resolved into instances of leukæmia?

2. Exploratory laparotomy was actually proposed and very seriously considered in this case. But in view of the professional insanity that has attended the evolution of the "abdominal instinct," this proposal cannot be regarded as phenomenal. Splenotomy, according to Collier, has been performed in twenty-nine cases. Out of these, eighteen were in cases of leukæmia—all patients died immediately after the operation. Of the rest,

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sixty-one per cent. recovered. The operation of extirpation of the leukæmic spleen is justly looked upon as an art error.

3. The family history of the patient is good. As before remarked, the father and mother, though aged, are in excellent health. The only sister is the healthy mother of a robust child. The patient's four living children are sound and active.

4. The history of the case seems to point to some necessary relation between pregnancy, or between prolonged lactation during pregnancy, or both these factors, and the leukæmia. The evidence, indeed, is only probable, but it is sufficient to create a presumption. As pertinent to the discussion, I beg to submit the following sentence, taken from the Introduction of Butler's *Analogy:* "In questions of difficulty, or such as are thought so, where more satisfactory evidence cannot be had or is not seen, if the result of examination be that there appears upon the whole the lowest presumption on any one side and none on the other, or a greater presumption on one side, though in the lowest degree greater, this determines the question even in matters of speculation, and in matters of practice will lay us under an absolute and formal obligation, in point of prudence and of interest, to act upon that presumption or low probability, though it be so low as to leave the mind in very great doubt which is the truth."

This view of the nature of the case receives some support from its antecedent probability. During gestation the organs of the blood-glandular system, notably the spleen, the thyroid and lymphatic glands, increase in size and their functional activity is augmented. According to Birch-Hirschfeld,[5] the normal average weight of the spleen in the non-gravid woman is one hundred and forty grammes, while at term it is one hundred and eighty grammes. Virchow says that the number of white corpuscles is normally increased during pregnancy. Sänger, indeed, questions the evidence upon which this assertion rests, but he does not prove that the physiological leucocytosis does not occur. Clinical experience teaches that physiological processes are liable to undergo pathological exaggeration during pregnancy. Restricting attention to the blood we have examples of the truth of this statement in the chlorosis, hydræmia, and pernicious anæmia of the gravid woman. It is conceivable that under certain conditions

[5] Berliner klin. Wochenschrift, 1878, p. 324.

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the physiological leucocytosis of pregnancy and the normal splenic hypertrophy may undergo pathological exaggeration and terminate in leukæmia. This notion is not forced nor strange, but is altogether in harmony with what we know of the constitution and the course of nature.

As to the exact effects of lactation during the usual period, upon the blood-glandular system, but little is known, and our ignorance is still greater when we come to lactation during pregnancy. From carefully conducted examinations of the mammary glands of guinea-pigs, during and after pregnancy, Rauber concludes that "Milk owes its origin to the entrance of countless leucocytes into the lumen of the gland-vesicles. The emigrated lymphoid elements penetrate the alveolar walls, passing through the single layer of epithelial cells which lines them. Arrived in the interior of an ultimate acinus, the leucocytes undergo fatty metamorphosis and thus furnish the most essential and characteristic ingredient of milk, viz., the milk-globule."

Satterthwaite says:[6] "Thus the primitive opinion advanced by Empedocles, describing milk as white pus, is in a measure revived, and milk is held to be directly derived from the white corpuscles of the blood."

But, as at present informed, Rauber's ingenious hypothesis has never been definitely corroborated, and it is not positively asserted that in this case the excessive demand by the lacteal secretion upon the white corpuscles was the cause of the splenic tumor.

The probable time of the commencement of the leukæmia in this case coincides with the latter days of the sixth pregnancy. This is the period when the blood-glandular organs are most severely taxed by pregnancy itself. Add to this the additional strain of suckling a vigorous babe, and it seems that there is presented a cause adequate to the phenomenon.

This proposition rests chiefly upon the history of the case, obviously a precarious basis. Still, three weeks before labor the woman was the picture of health, as shown by her photograph, and by her weight, one hundred and fifty-eight pounds. Soon after labor and after the failure of the milk the pains were felt in the side, and the splenic tumor, small then, appeared. All

[6] Manual of Histology, 1881.

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these facts fix with tolerable accuracy this time as the date of the commencement of the disease. This impression is confirmed by the duration and by the character of the course of the disease. The patient died eleven months and nineteen days after her sixth confinement, and the course of the disease was steadily progressive.

Out of the sixty-three cases tabulated by Gowers, the duration of the disease was under a year in the thirteen examples whose symptoms more or less closely resemble the clinical picture of this case, and in general the average duration of the malady may be reckoned as between one and two years (Eichhorst).

The history of the case offers no other explanation of the leukæmia. Trauma, syphilis, alcoholism, can be absolutely excluded. The patient never resided in a malarial region, and to the best of her knowledge never suffered from malarial infection.

A few cases have been published that seem to point to a causal relation between some phase of the puerperal state and leukæmia. Sänger, indeed, insists that this connection has never been established. On the one hand, he thinks that pregnancy does not affect the origin or course of leukæmia; on the other hand, he seeks to prove that leukæmia affects pregnancy in the determination of premature labor only indirectly by the greatly increased intra-abdominal tension, on account of the presence of the splenic tumor, ascites, meteorism of the intestines and the like. "The leukæmic quality of the blood, as such," he writes, "does not need to be invoked in explanation." But, as before remarked, the weight of evidence, as it seems to me, is in favor of the older view, of some necessary reciprocal relation between pregnancy and leukæmia. For my purpose, it is sufficient to mention merely one old and three new cases.

Leube[7] and Fleischer describe a case of a myelogenic leukæmia. A woman, strong and healthy up to the time of examination, developed four months after a normal labor, signs of a somewhat rapidly increasing leukæmia, without demonstrable cause. There were impairment of nutrition and strength, syncope, headache, anorexia, and also painfulness and swelling, which

[7] Ein Beitrag zur Lehre von der Leukæmie, Virchow's Archiv, lxxxiii., p. 1124.

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finally in part disappeared, of the left lower extremity. Five weeks later, there were signs of a high degree of anæmia, blowing murmur over the heart and a small compressible pulse. No enlargement of spleen, liver, or lymphatics. The number of red corpuscles was significantly decreased and there were both relative and absolute increase of the white corpuscles. The left tibia and left tarsus were painful on pressure. On account of rapidly increasing gangrene of the skin, amputation of the left foot was performed and was followed by death, six days later. Section revealed extreme anæmia of all internal organs, advanced degeneration of the cardiac muscle and chronic ulcer of the stomach, but no change in the liver, spleen or lymphatics. The bone-marrow was red and hyperplastic, with numerous nucleated red blood-corpuscles (transition forms, and numerous marrrow cells).

According to Osler's[8] interpretation "This was no doubt a case of post-partum anæmia aggravated by the presence of ulcer of the stomach, and the great interest of the case lies in the transition of the anæmia into leukæmia."

In Cameron's[9] case, there were presented among others, the following points of interests: "1. Splenic tumor was first noticed by her at the beginning of her sixth pregnancy." "2. Spleen and liver always enlarge during pregnancy and become tender." "3. The progressively enormous increase of white cells and decrease of red cells, as pregnancy advances." "4. The rapid subsidence of œdema and dyspnœa after the termination of labor, together with the rapid increase of red and decrease of white cells."

Of the later course of this case, Dr. Cameron, under date of June 3, 1890, writes me: "My patient is still living and has been confined twice since the Washington meeting. The first time she made an excellent recovery and regained her health so much that she was able to do all her own housework. The child was premature and died very shortly after birth, but was quite free from all trace of leukæmia. During her last pregnancy her health was poor. She became very anæmic and suffered so much

[8] Pepper's System of Medicine, vol. iii. p. 920.

[9] Transactions of the International Medical Congress, Ninth Session, Washington, 1887. Vol. ii. p. 330.

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from dyspnœa, palpitation, and threatenings of heart failure that I was obliged to induce labor about the seventh month. The fœtus had perished some days previously. She barely escaped with her life, and is slowly going down-hill. The splenic tumor and her blood-count remain about the same."

James L. Greene's[10] report of two cases of leukæmia, so sharply criticised by Sänger, while defective, is still of a certain value. His first case, during a first pregnancy, was an example of acute lienal leukæmia that was fatal within six months of the apparent outset. Although malarial infection cannot be absolutely excluded in this case, the course of the disease creates the presumption that malaria, if present, must have played a minor *rôle*. It is to be hoped that the history of Greene's second case will be filled out in the near future, since, as at present described, the diagnosis of leukæmia, to say nothing of the variety, is not established. The case is that of a young primipara, the sister of the patient of the first example, who suffered from symptoms pointing to leukæmia. Upon the artificial induction of abortion, the patient promptly recovered. Of this case Dr. Greene, under the date of May 30, 1890, writes me: "The second case mentioned by me, Mrs. C., has conceived since the report was published, and with this condition returned all of the symptoms of leukæmia. An abortion was produced and she regained her health as before."

On account of the antecedent probability of the view, on account of the coincidence of the apparent onset of the disease with the later days of pregnancy, on account of the absence of any other demonstrable adequate cause, and finally, on account of the evidence accumulated from the cases cited, it seems to me to be highly probable, that in this case, the leukæmia sustained some necessary relation to pregnancy, or to prolonged lactation during pregnancy, or to both these factors.

2330 Indiana Avenue.

Dr. Archibald Church.—Mr. President: At the courteous request of Dr. Jaggard I present here under the microscope a specimen of leukæmic blood taken from a case this afternoon, and will briefly outline the clinical history:

The subject of these few and hasty notes is a typical New

[10] New York Medical Journal, February 11, 1888, p. 144.

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England housewife. She is tall, slender, delicate, fair, and has never had any severe illness during her lifetime, and has never been in robust health. There is no history or indication or suspicion of malarial infection. She is now fifty-four years of age and has been a widow for sixteen years. Her father is stated to have died of some obscure liver complaint, one sister of galloping consumption and one brother and another sister of acute diseases. She had an uneventful childhood, and was considered fairly vigorous, but did not menstruate until the age of eighteen. From that time on until the menopause, which occurred at forty-four, menstruation was never marked by peculiar symptoms or difficulty; it was usually scanty in quantity and unaccompanied by particular pain. She gave birth to two sons, both of whom are living and in good health. After the first confinement she presented a high degree of anæmia, lasting some months, and passing away during the second pregnancy. After her husband's death she supported herself and family by taking in boarders. She was subjected to a great deal of anxiety and worry, but her health was not considered impaired until a year ago. Menstruation suddenly ceased at the age of forty-four, and for seven years afterwards she was troubled with all the subjective symptoms which afflict some women at the menopause; during this entire time flashes of heat and suffocative attacks were a constant annoyance. Following that epoch which brings us to within three years of the present date, she was in comparatively good health and did a large amount of work and was subject to a great amount of responsibility. About a year and a half ago when I first made her acquaintance I noticed a peculiar pallor, but she insisted that she was in good health and no one of her acquaintances or her family considered her ill or even ailing. How long previous to this time the pallor had existed I cannot learn, but I am inclined to think it extended back possibly to the end of the subjective condition following the menopause. That is a mere supposition, however. About a year ago she commenced to run down very rapidly and during the past eight months has been confined to her bed. During this time she has been under the care of some eminent homeopathists of this city, who pronounced the malady "consumption of the bowels." She has had no elevation of temperature and no anorexia, but, on the

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contrary, the appetite has been extremely good. She sometimes experienced an amount of thirst that was wonderful, requiring a large amount of water, milk or other fluids, every hour. During the past three years there has been a little looseness of the bowels, but the stools have never been peculiar nor have they shown signs of blood. She has been subject to attacks of syncope, which were considered as pointing to brain trouble by her family, and to frequent epistaxis. The case came under my care about a week ago. I found her general appearance that of extreme anæmia, with considerable emaciation; the lips were perfectly white, the tongue almost devoid of redness, as were the palate and fauces. Her pulse was fair as to volume and in the recumbent position eighty to the minute. Anæmic murmurs were heard over the cervical vessels. Her temperature was normal. Her appetite and digestion left nothing to be desired; she eats everything and takes care of it without distress. I found the urine normal to all tests and reactions, except that it was a little over-acid.

Upon examination of the abdomen I found the spleen much enlarged, extending downward to the iliac crest, anteriorly to within three inches of the median line and apparently encroaching on the lung space above, dullness being present as high as the sixth rib in the axillary line. Its surface to palpitation was smooth. The liver is also much enlarged, extending downward about four inches below the costal margin of the thorax and on the left is in apposition with the spleen. There is no enlargement of the lymphatic system as far as I can detect. There is slight œdema of the feet and puffiness of the face. Sometimes I am inclined to think that the integument about the abdomen feels boggy, but no ascites is present. There is nothing abnormal so far as the lungs and heart are concerned; the skin presents nothing unusual. Upon examining the blood I found a large increase in the white elements, there being about one white to six of the red; I have not had time to make an accurate estimate of the proportion, but in the ordinary microscopic field the ratio is nearly as stated. When she has nose-bleed the blood scarcely stains a handkerchief, and the drop obtained by pricking the finger tip is yellowish and sticky.

Upon examining the retina with the ophthalmoscope, I found

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in the periphery of the retinal expanse a number of white patches, and the reflex is yellowish instead of pink. At present there is no interference with vision, which is tolerably acute. Her mind is bright and she talks as much and as interestingly as any woman could in her condition, and is extremely hopeful and ambitious for the future.

I have given an absolutely unfavorable prognosis, although during the past fifty days she has gained some in strength and is now able to sit up the greater part of the day, owing, perhaps, to removal from the worry of her business and to quieter surroundings. Upon the recommendation of a homeopathic physician she has been taking cod liver oil, with plenty of milk and some brandy, all of which I approve. I have ventured to put her on a compound of arsenic, quinine and iron, not expecting to do much good, but hoping it will do no harm, and as at present she is slightly on the mend, I am in hopes that for a time at least she may rally. But as to the final result, it is unquestionably fatal.

NOTE.—This patient died in July, 1890, and the homeopathic practitioners into whose hands the case had returned, made an autopsy, finding to their surprise an enlarged spleen.

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HERPES OF THE FACE AND CORNEA.

By CASEY A. WOOD, C.M., M.D.,

Pathologist to the Illinois Eye and Ear Infirmary, Professor of Ophthalmology Post-Graduate Medical School.

Read before the Chicago Medical Society, February 2, 1891.

I have ventured to introduce the subject of facial herpes complicated with invasion of the cornea to this society, as it seems to me to be a form of disease in which the general practitioner is or ought to be quite as much interested as the specialist. The medical man who knows that all cases of herpes involving the labial, malar, nasal and orbital regions may extend to the ocular structures will be on the lookout for that accident; and when he further understands what parts are most likely to be affected and what the dangers of the affection are, it will make him more completely master of the situation and prevent him from falling into errors of diagnosis and prognosis.

Practically there are two forms of facial herpes, one much more painful, more chronic and less amenable to treatment than the other; while, corresponding to and forming part of them, we find two distinct forms of corneal vesicles, the one comparatively rare, resisting treatment and tending to deep ulceration of the tissues and often to the destruction of the eye, while the other, more frequently met with, more directly influenced by proper remedies and more superficial in character, usually heals without doing very much harm.

Although first described many years ago by Hutchinson and Bowman,[1] it was Horner[2] who first drew a clear picture of both these affections and showed how they differ and how they may be distinguished from one another. The first—the rarer and severer class—he calls by the old name, *herpes zoster ophthalmicus* or *zona ophthalmica;* and the second, the lighter and more common disease, because it mostly accompanies, like herpes labialis, acute catarrhal inflammations of the respiratory tract—*herpes febrilis* or *catarrhalis.* This division of *herpes corneæ* is not, strange to say, always followed by late writers upon the subject.

[1] Ophthalmic Hospital Reports, vol. vi.

[2] Klin. Monatsbl. für Augenheilkunde, 1871, p. 321., and Gerhardt's Handbuch der Kinderkrankheiten, p. 333, 1889.

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For example Jessop,[3] who relates several cases and gives the best literary *resumé* known to me of this subject, although he mentions Horner's class of cases—*herpes febrilis*—does not insist upon such a division. However DeWecker[4] (as well as Saemisch[5]) recognizes it but adds a third class, said to be rarely met with, to be idiopathic in character, confined to the cornea and to be an accompaniment of keratitis, conjunctivitis, slight corneal injuries and so on. With this third class we shall have nothing to do, as it does not come within the scope of this paper.

It has not been my fortune to have followed the course of an example of the severer form of corneal herpes—the true *herpes zoster ophthalmicus*—but I have seen at least one patient who bore upon the skin of his face and upper lid of the right side deep scars from an attack of this formidable disease. The cornea was very cloudy and vision was reduced to the perception of shadows. I shall quote a short description of a case of true *zona* furnished by Dr. Joy Jeffries:[6] "March 14th, 1873, a man, age fifty-two, applied to me, from whom and his wife I obtained the following account. Thirty-four days ago he noticed his left eye a little blood-shot, and his forehead, eyelids, and side of his nose became red and 'awfully swelled' within the next two days. The parts were very painful and he had intense neuralgic pain over his head on the left side. An eruption appeared, which left scabs, lasting two or three weeks. He insisted that he had had no sleep for the first week, and no good rest for three weeks. He presented all the appearances of a man exhausted by a severe attack of ophthalmic shingles. There are still some crusts up to the hair, also on the nose and lower lid; one on the brow, over the exit of the frontal nerve. There is pain all over the scalp on the left side, although but little blush of the surface. Patient cannot distinguish any difference of sensation on the two sides. The upper lid is swollen and droops a little over the lower. The man cannot open this eye. The globe is injested and the cornea looks badly inflamed and infiltrated. A four-grain solution of atropine was ordered and quinine freely. March 22d—There is still some pain over

[3] Trans. Oph. Soc. United Kingdom, 1886, p. 390.

[4] Manuel d Ophthalmologie. DeWecker et Masselon, p. 212.

[5] Graefe und Saemisch. Bd. iv. S. 234.

[6] Trans. Am. Oph. Socy. 1873, p. 73.

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the forehead. The cornea is sloughing in parts. March 26th—The cornea has opened with an irregular slough, and the aqueous flows off. No pus runs, and no pain. April 11th—The cornea has healed with a flattened cicatrix. No pain. 19th—Cornea flat, less irritated. Vision a "white cloud." 25th the same. The quinine and atropine have been continued. May 2d, less pain in head. The patient feels it in cold weather. May 9th—No pain now. Continue quinine." This case was thought to be one of facial erysipelas and was, in its early stages, treated as such.

The corneal complications in *herpes febrilis* are fortunately less severe and their treatment is followed with much better success. I attended last summer one of these cases in the service of Dr. W. F. Smith, at the Alexian Brothers' Hospital here, a short account of which I shall give: J. S., a Swiss, twenty-three years of age, had four days before I first saw him a chill followed by fever, fast pulse and difficulty of swallowing. Two days afterwards he noticed upon the skin near the right outer canthus a collection of vesicles surrounded by a reddened area. This was followed very shortly by similar eruptions on the lower lid, cheek and nose. The pain about the eye was intense and followed especially the distribution of the infra-orbital nerve as well as along the forehead and temple. When first seen his temperature was 102°, pulse 100; he had a flushed face, sore throat, and great pain on swallowing. An examination showed that he had an acute follicular tonsillitis on both sides. The herpetic vesicles were well developed and appeared in clusters of from four to seven. He described the pain as burning in character, and that it ran along his nose and cheek. There was no anæsthesia of the skin covering the face and forehead. The lower eyelid was swollen and red. A profuse discharge issued from the eye and so copious was it that suspicion of gonorrhœal ophthalmia was aroused in the mind of the physician who first saw him. This diagnosis was rendered probable by the fact that the patient was at the time suffering from gonorrhœa. On making a careful examination of the eye there were plainly to be seen in the inner-upper quadrant of the cornea a row of broken vesicles looking just as if there had been a succession of recent corneal abrasions. There was considerable pericorneal injection, photophobia and lachrymation. The cornea itself was not markedly anæsthetic.

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The iris was unaffected and the pupil, although somewhat contracted, acted readily to light. The conjunctiva of the lower lid especially was much injected, swollen and dotted over with streaks of pus. In a few days the affected cornea showed several small irregularities of surface corresponding to the seat of the vesicles, the epithelium came away and a number of superficial ulcerations resulted. In two weeks' time faintly marked opacities still occupied the site of the original eruption. Appropriate treatment was given for the sore throat, the pain in the face was relieved by anodynes, while the corneal disease was treated by the instillation of weak eserine drops—as DeWecker advocates—combined with the frequent use of boracic acid in a mild solution of mercuric chloride. When last seen the patient was entirely well with the exception of reddened patches of skin and small peripheral nebulæ corneæ that showed where the herpetic eruption had been. There was no cuticular tenderness or anæsthesia, or periosteal soreness about the face. Vision was normal.

Miss Josephine Kendall,[7] an American lady, collected and published a list of 115 cases of febrile herpes corneæ attending Prof. Horner's klinik in Zurich. Of these, 7 occurred with simple fever; 13 with pneumonia; 2 with intestinal catarrh; 2 with rheumatism; 2 were puerperal cases, and 36 accompanied coryza, acute sore throat, or cough. In the remainder the cause was a mixed one or was unknown. Only 15 cases occurred in females; 4 were under five years of age, and 74 were over fifty.

Although, clinically, the above-mentioned division of corneal herpes is very useful, I do not think that from a pathological standpoint it can be maintained. The herpetic vesicles in the severe as well as in the mild form of this disease—like herpes zoster in other parts of the body—follow the distribution of the superficial sensory nerves and the essential lesion is a true neuritis. In all forms of herpes frontalis it is the ophthalmic division of the fifth nerve (giving off its main branches the lachrymal and frontal) that we have to deal with. When the neuritic process affects the main trunks of the nerve or reaches still further back we have true *zona ophthalmica;* when only the terminal filaments are inflamed a less serious lesion is produced.

[7] Uber Herpes Cornæ. In Aug. Dissertation, Zurich, 1880.

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That vesicular eruptions occur along the course of the sensory and mixed nerves after injury of the latter has long been recognized, but it was not until quite recently that the existence of morbid alterations in the nervous tissues were established post-mortem.

The work done in this department is described in Zeigler's Pathology.[8] Turning to ophthalmic herpes Wiedner found at the autopsy of a man dead five years after a severe attack of facial herpes, that there were changes in both the connective tissue and ganglionic cells of the Gasserion ganglion. Thence the first division of the fifth to its distribution upon the face furnished decided evidence of structural alterations. Section of the lachrymal gland showed it to be enlarged, infiltrated and the seat of a small central abscess. There were collections of pus underneath the conjunctiva; the choroid and iris were infiltrated by leucocytes, and ulcerations were present on the anterior surface of the cornea. The best described instance is, however, the well-known and much quoted case examined by Wyss.[9] There had been during life a recent history of herpes following the terminal distribution of the ophthalmic division of the fifth nerve. The trunk of the nerve was found to be healthy until it reached the Gasserion ganglion. The ganglion itself was larger than normal, having been swollen from hemmorhage within its substance. This extravasation being on the inner side involved chiefly the first division of the nerve, whose sheath was bathed in pus. When minutely examined the second and third divisions were found to be healthy, while alterations in structure were detected in the ophthalmic branch. Small extravasations of blood and collections of lymph cells surrounded the long ciliary nerves. Wyss thinks that these changes appeared to be the result of a true acute neuritis. Several other post-mortem examinations serve to complete the evidence upon this point, and I think we are justified in assuming that the duration, the severity and the effects of treatment are largely determined by the extent to which the nerve is involved in inflammatory changes. In other words, the severer form of herpes results from implication of the main trunk of the sensory nerve. This morbid process may begin in

[8] Am. Edition, p. 523.

[9] Archiv. der Heilkunde, S. 263, 1871.

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the brain or cord itself; it may affect it shortly after it issues from the nervous centre; it may attack the important ganglia in its course, or, finally, it may be a neuritis ascendens, peripheral in origin but affecting the main trunk by extension of the inflammatory process.[10]

In herpes febrilis or catarrhalis, on the other hand, the neuritis is confined to the nerve-endings mainly, or does not travel back any appreciable distance towards the main trunk, and consequently is not attended by the serious lesions which characterize true *herpes zoster ophthalmicus.* If this be true, the divisions spoken of into *zona ophthalmica* and the *herpes febrilis* of Horner has a clinical value simply, and there is no strict and definite line of demarcation that separates, in a pathological sense, the one from the other.

[*For Discussion see Society Proceedings.*]

[10] Vide Ross, Diseases of the Nervous System, p. 141.

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SOME COMMON ERRORS IN DIAGNOSING DISEASES OF THE SKIN.

By JOSEPH ZEISLER, M.D.,

Professor of Skin and Venereal Diseases in the Chicago Medical College, Woman's Medical College, Post-Graduate Medical School, Dermatologist to Cook County Hospital, Member of the American Dermatological Association, etc., etc.

Read before the Chicago Medical Society, February 2d, 1891.

There is surely no other class of diseases, in which the chief symptoms are more tangible and conspicuous, more ready for close inspection and touch, more easy of examination by the eye, be it unaided or armed with loupe and microscope, than in affections of the skin, and yet perhaps in no other branch of medicine are diagnostical errors committed with equal frequency. The cause for this pecular discrepancy lies partly in the fact, that real difficulties are indeed only too often encountered, inasmuch as diseases of essentially different etiology and nature may assume similar pictures. Under such circumstances only large experience and often only a continued observation of the course of the disease will help in arriving at a correct understanding of the case. In a large number of instances, the symptoms are so clear and unmistakable, that a misinterpretation of the same, by the majority of general practitioners, appears in an entirely different light; and without wishing to do any one in particular injustice, I may state it as my experience, that many physicians, who in every other direction are splendidly equipped, look upon dermatology as a terra incognita and are usually free in admitting their inability of recognizing even common forms of cutaneous disorders. This may be well excused, if we consider the entire lack of facilities, at least in our city, for the study of that important branch of medicine, and more especially the curious fact that, with the many and well-appointed hospitals in our city, there is not one single ward set aside for the treatment and methodical study of skin and venereal diseases. To show how different the opportunities in other cities are, I may mention that Vienna, with no more inhabitants than Chicago, has in the "General Hospital" three distinct services for cutaneous and syphilitic affections, with an aggregate of about three hundred beds, besides largely attended outdoor-departments, and that four other military and civil hospitals have each a special dermato-

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logical service, with several wards, a chief and his assistants. This subject has been dwelt upon with great emphasis by Dr. P. A. Morrow in an address recently delivered before the American Dermatological Association.

Returning, after this deviation, to my theme, let me say first, that a frequent source of error in diagnosing skin diseases is too great a reliance upon the statements of most patients. Time and again have I learned to appreciate the golden rule of my teacher Kaposi, never to ask any questions of the patient, but to examine his skin objectively and uninfluenced and, so to say, to read on his skin all the anamnestical data. Duration of the trouble, presence or absence of itching, previous treatment and other valuable points will thus be often easily learned without the aid of the patient, which will greatly contribute to make him feel that his case is well understood. How easily patients may intentionally or involuntarily mislead the physician, I experienced in a very striking manner only a few days ago. A young man came to see me for what he believed to be quinsy sore throat, of which he had suffered for the past two weeks. Looking into his mouth and throat, I immediately informed the patient that he had syphilis and asked him how long ago he had had a chancre. He vigorously denied any such accident and thought it impossible that he could have been infected. I demonstrated to him the presence of numerous mucous patches on his tongue and tonsils, the corners of his mouth, and even the depressed cicatrix on the left border of the tongue, in all probability the seat of the primary lesion, but all this did not seem to him convincing enough. I then made him undress and discovered on his chest and back and the upper arms a classical roseola, and found all the superficial lymphatic glands distinctly enlarged. This at least settled the diagnosis, although it did not clear up the mode of infection. However, we cannot be expected to play the part of detective always.

This case of an unconscious infection by the syphilitic poison is by no means a unique one, and I could cite from my own observations a number of similar occurrences. We can learn another lesson from it, namely, to examine, whenever practical, the whole integument, and not only the place which is offered for inspection. I have still under treatment a young druggist, who some time ago was treated by one of his medical friends for

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what appeared to be a very rebellious acne of the face. When he first consulted me, I noticed besides the eruption on his face a well-developed iritis of the left eye. Suspecting the specific nature and causal connection of both affections, I examined his body, which I found literally covered with a large papular syphilide. The young man, who evidently had not paid much attention to this extensive eruption, was perfectly alarmed to learn the nature of his trouble, and, protesting his innocence, assured me that for the past year he had not indulged in sexual intercourse, as he expected to get married to a young lady. A thorough search revealed the cicatrix of the former initial lesion near the tip of the tongue, and I learned that this place had for some time been the seat of a stubborn sore. The young lady in turn proved also perfectly innocent, for an examination showed her to be a virgo intacta, adorned, however, by some condylomata lata and mucous patches in the mouth, for which she had to thank her own father, who in an intoxicated condition had attempted to abuse her.

This acquisition of syphilis as a non-venereal disease, when no history of infection can be gained, is too often overlooked. I shall never forget the case of a busy fellow practitioner in this city, who for some time had noticed an eruption on his body and the palms of his hands, which he showed to several professional friends, who in the absence of any anamnestical data, never suspected syphilis. While one of them considered the case as eczema and prescribed diachylon ointment, the rest pronounced the eruption psoriasis and recommended chrysarobin, until the persistence of the symptoms and the complication by iritis at last put him on his guard.

While we thus see how grave errors may sometimes be committed by overlooking the syphilitic nature of cutaneous manifestations, the opposite mistake of pronouncing as specific an eruption of entirely different nature is probably made just as frequently. Once a prominent lawyer visited me with his wife and desired my opinion about a breaking out on the lady's body, which by the family physician had been declared as syphilitic. I found a large number of pea-sized pale-red papules, covered with glistening, silverish white scales, which could easily be removed, when a minute bleeding point would be noticed; very

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little itching, no glandular infiltration, no alopecia, no sore throat, in short, a case of psoriasis, which by its somewhat acute development deviated from the ordinary type. But even chronic, typical cases of psoriasis, with large, characteristic, scaly patches are often taken as signs of syphilis, treated by mercury and the iodides, and sent to the Hot Springs.

Last year I was called to one of the hospitals to see a young girl with extensive ulcerations and hemorrhagic bullæ of the skin, which the house physician had treated for some time with anti-specific remedies. I called the attention of the young Æsculap to the bleeding of the gums and nostrils, to the irregular shape, the soft edges, the hemorrhagic base of the ulcers, and still further referred him to the hospital record, which showed that the patient had previously been treated there for a similar attack, which then was diagnosed by me as purpura hemorrhagica or Werlhaff's disease. The child was then, partly on account of the improper treatment, in a very miserable condition, and died soon afterward.

Acne varioliformis, that peculiar pustular affection, which has been described under various designations as Acne frontalis, A. necrotica, A. atrophica (Bulkley), Molluscum sebaccum (Bazin), is also occasionally regarded as a specific trouble, perhaps because cicatrization terminates the process. This disease is somewhat rare, but the peculiar localization, mostly on the forehead and anterior part of the scalp, occasionally on the nose and in the bearded face, less often on the back, the formation of thick crusts after the pustules have desiccated, the resulting depressed scar, the recurrence of the eruption in irregular intervals, will help to strengthen the diagnosis.

As just indicated, a frequent source of error in recognizing skin diseases is indeed a lack of acquaintance with their peculiar localization, which is sometimes the only important factor in determining the diagnosis. Scabies, for instance, is always found on certain well-defined places of predilection and leaves the face, with rare exceptions, free. And yet, incredible as it may sound, I recently had a patient who for five months had been treated for that trouble under differing diagnoses, as urticaria, eczema, and even lichen, although the penis and buttocks, and interdigital spaces were almost labeled with the characteristic furrows.

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Prurigo, also, can only be recognized by examining the whole integument, when the extensor surfaces will be found principally involved, but the cubital, inguinal and popliteal spaces perfectly smooth. The existence of this disease in the United States was for a long time denied by dermatologists. But at the meeting of the American Dermatological Association in September, 1889, I was enabled to report a series of twelve cases of prurigo, showing that this disease is by no means very rare here, and R. W. Taylor and James C. White have since confirmed my views, that prurigo is often overlooked and taken for eczema, urticaria, lichen, etc.

Another disease with a rather typical distribution of its lesions and which is frequently confounded with psoriasis, is eczema seborrhoicum, a very common type of eczema, as described in a classical manner by Unna. It occurs principally on the scalp, usually extending over the hair border towards the forehead and neck, on the eyebrows, external auditory canal, around the corners of the nose, on the sternal and intrascapular region, and occasionally affects the axillary, suprapubic and genito-crural regions. The scales differ from those in psoriasis in that they are more fatty, scanty and never imbricated. I have no doubt that in many instances of claimed cures of psoriasis the real nature of the trouble has been that of a seborrhoical eczema, which by the gyrate outlines of some of the patches and its other features will sometimes simulate a light case of psoriasis.

The idea that most skin diseases are caused by systemic derangements, not to say by impurities of the blood, seems still to be quite prevalent, even among modern physicians, and thus sometimes near lying local causes will be overlooked, whose removal would easily accomplish a cure. An interesting illustration for this fact was seen by me in a very respectable young lady from California, who spent some time with relatives in Chicago, and soon after her arrival began to notice an urticarial rash on her body. The family doctor very promptly diagnosed hives and prescribed cathartics and alteratives, but new crops of wheals continued to appear. After being troubled some four weeks she came to consult me, and I modestly inquired about the possibility of the young lady having noticed in her bed some six-legged companions. This was blushingly confirmed, after which the treatment was suggested very easily. In another case a young

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man, who had recently arrived here from New York, noticed an extensive eruption on the body, which had unsuccessfully been treated under the supposition that it was an acute papular eczema. Diligently examining his body, which was covered with a luxuriant growth of hair, I succeeded to pick up with my tweezers from the base of a hair on the lower limb what appeared to be a little black point, but soon moved along slowly, as pediculi will do.

During the late fall I see every year a number of cases of that well-defined disease, pruritus hiemalis (winter itch), which was first described by Duhring. This trouble does not seem to be universally appreciated and is frequently confounded with eczema. This word eczema is, by the way, of all dermatological terms, perhaps the most abused, and there is hardly a skin affection to which I have not, on and off, found that name being given. All forms of pruritus, sycosis, lichen, prurigo and many parasitical dermatoses are occasionally baptized with the always ready name eczema.

The term lupus, too, is often used in a very loose manner. First, there is rarely a distinction made between lupus vulgaris, that one form of local tuberculosis of the skin, and lupus erythematosus, which has nothing to do with the other and ought better to be called according to Hebra, Sen., seborrhœa congestiva. Then, the natural history of lupus vulgaris is often ignored. Thus I saw a short time ago that diagnosis made in a man near the fortieth year, who had a pea-sized follicular infiltration on his nose, while it is the rule for lupus never to appear after puberty. In another case a young man, over thirty years old, had an indurated and superficially ulcerated sore on his lower lip of the size of a hazelnut. He came to me pretty well scared, for during six weeks of previous treatment two prominent physicians had pronounced it as epithelioma, while another took it for lupus. My first question of this patient, after examining the trouble, was "When have you had a chancre?" to which the prompt reply was given, ten years ago. The presence of a large scar on the chin, the absence of any cartilaginous induration on the borders of the ulcer and the considerable pain further pointed to the diagnosis of an ulcerating gumma, which was sufficiently proven to be

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correct by the result of treatment, which in the course of ten days caused the ulcer to heal up.

I could easily mention from my own experience any number of further cases, illustrating various diagnostical errors, but this would go far beyond the scope of this merely suggestive essay. We all know that mistakes will sometimes be unavoidable, not only in dermatology, but in all other departments of medicine; as long, however, as the patient gets well, all is well. To show, on the other hand, how treatment based upon a false diagnosis may be followed by almost disastrous consequences, let me give you in conclusion a few notes about a case, which impressed itself especially strongly upon my mind. A young widow from Boston came to Chicago upon the solicitation of her sister, to place herself under the care of a physician who stands at the front of the homœopathic fraternity. She suffered from extensive ulcerations in her face, particularly the nose, cheeks and lips. The doctor and his assistant, after reading up the case, decided upon the diagnosis lupus, and finding in their reference works thorough scraping and excision recommended as one of the methods of treatment, proceeded to follow this plan of action. During a year the patient submitted to twelve different surgical operations under chloroform narcosis, but new ulcerations appeared and the continued suffering almost made her a physical wreck. When finally her remarkable confidence and power of endurance had given out, she consulted Dr. I. N. Danforth, of this city, who kindly referred her to me. I found on her face about half a dozen smaller and larger ulcers, which showed the very characteristic horseshoe forms. The greater part of the upper lip was missing, having been excised, which made the closing of the mouth almost impossible, and the whole ala nasi of the right side had also been sacrificed at one of those "surgical" procedures. Numerous disfiguring scars moreover gave the face a very pitiable aspect. The fact could easily be ascertained, that the lady had some years ago been infected by her husband, which was followed by various eruptions on the body and also by iritis. How with such an anamnesis and with the unmistakable, objective signs, syphilis could be overlooked, and in entire defiance of all that is known about lupus, this diagnosis made, is beyond my comprehension. The lady made a splendid recovery as far as the

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ulcers then present were concerned, which healed in two weeks and never again appeared in a year, but whether a plastic operation, which she now contemplates, will be able to restore the shape of the nose and mouth, when no flexible skin is available in the adjoining parts, I doubt very much. I have no further comment to make upon this case, except that I succeeded in preventing the lady from beginning a suit for malpractice. Let me finally assure you that the foregoing paper is presented with no ill spirit, but with the sincere wish to awaken a little more interest in the somewhat neglected study of dermatology.

125 STATE STREET.

[*For Discussion see Society Proceedings.*]

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PAST AND PRESENT LAWS REGARDING THE LEGAL RESTRAINT AND DETENTION OF THE INSANE IN THE STATE OF ILLINOIS.

BY HAROLD N. MOYER, M.D.,

Professor of Physiology in Rush Medical College, etc.

Read before a joint session of the Chicago Medical Society and the Medico Legal Society of Chicago, February 16th, 1891.

Any extensive general consideration of lunacy laws would, I think, be foreign to the scope of this discussion. We are assembled to discuss especially the lunacy act of Illinois and to suggest such changes as may be needed. Therefore it would only be wise to briefly consider lunacy acts in general as far as they have a direct bearing upon proposed, or desirable changes in the law relating to lunatics in this state.

The one peculiar and striking feature of the Illinois law is that it requires a jury trial. A person is arrested, accused of insanity, placed upon trial and convicted the same as he would be for grand larceny. It is difficult to see what necessity the legislature saw for such a law, but their imaginations must have been stimulated by the accounts of incarcerations of sane people in lunatic asylums, a field that has long been popular with writers of sensational fiction, and thrilling melodramas, as well as for the modern newspaper reporter, who without difficulty gets himself tried and convicted of insanity, and committed to an asylum, where the necessity of furnishing "good copy" for his paper is at once apparent.

In lunacy legislation in Illinois everything possible seems to have been done to safe guard the entrance into the asylum, but once inside, the statutory law seems to lose all interest in him with the exception of the single clause by which a superintendent of a state institution is to be punished for the detention of a sane person. The legislature never seems to have taken into account the fact that patients frequently recover. A sane man may now be kept for life in a private insane asylum in this state. If he shall only have been unfortunate enough to have once been declared insane nothing will prevent his incarceration for a lifetime in some private asylum. In this respect legislation in Illinois has been strikingly different from that in England. There

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they have adhered to the certificate plan of admission, notwithstanding public clamor and sensational writers. Laws have been modified so as to secure constant inspection and oversight of every individual whether confined in a public or private asylum.

Our law makers have ever held up to them the frightful spectacle of a sane man committed to an asylum, and so much have their minds been occupied with this thought that they have become unmindful of the rights of the insane. The spectacle of a woman suffering from acute mania brought in a carriage to the Clark street entrance of our Court House, the gaping crowd, her screams as she is carried through the corridors; the clerks hurrying from their rooms, called out by the unwonted disturbance. All this is no fancy picture. I have personally participated in many such scenes.

There is no alienist of any reputation, or of practical experience, that thinks a jury trial is efficient in anything but exposing the hapless insane and their sorrowing relatives to vulgar curiosity. It does not keep the sane out of asylums, for in every biennial report of our State Hospitals several admissions appear upon the records as "not insane."

The inadequacy and defects in the laws of our state and of others have been repeatedly pointed out since 1884 by the State Board of Charities. They say: "It is generally conceded in almost every one of the United States, if not in all of them, the demand for a revision of the lunacy laws is urgent. The state of Illinois is in this regard in the same condition as other states. These laws are for the most part a compend of other statutes borrowed from a variety of sources and they are embellished by the crude suggestions of persons who have more or less clearly perceived the inadequacy of existing provisions, but who have not very well known how to cure their defects. Some of these suggestions have come from discharged patients whose recovery from their insanity was at least doubtful. They are characterized by duplicated and conflicting provisions, by omissions, by inconsistencies and by internal evidences of the want of comprehension, on the part of their authors, of the real nature of insanity, the actual perils from which the insane require protection or their true relation to the community."

It will be seen by even a cursory examination that this charge

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of the State Board is eminently true. For the statute at present in force, that one of 1874, is clearly a descendant of the earliest statute, that of 1823.

"*Act Approved February 12, 1823.*

"Whenever a lunatic or distracted person has an estate a relative, creditor or other person might apply to the Circuit Court, and it should order a jury to be summoned; and if in their judgment such person was a lunatic or distracted, then the judge should appoint a conservator. The conservator should make return to the Circuit Court. It was further enacted that the overseers of the poor should have charge of the body of such lunatic, and should have power to confine, and comfortably support such person and make a return thereof to the County Commissioners' court, whose duty it should be to make an order upon the County Treasurer for the same."

The Sixth General Assembly held at Vandalia passed an Act regulating the estates of idiots, lunatics and persons distracted, and for other purposes. This is substantially a repetition of the statute of '23, excepting that a bond was required from the conservator, and the support of the person was chargeable to the estate in case he had one and not to the county.

An Act approved February, 1831, seems to have been practically that of '23. It had an additional provision in that overseers of the poor are to have charge of the person of lunatics, and render an account to the Commissioners' court. The support in this statute *may* come from the lunatic's estate.

An Act was approved January, 1831, especially protecting the property of lunatics, and made bartering, trading with them to gain possession of their property, swindling, and punishable as such.

The statute of 1845 was drawn upon substantially the same lines as that of the earlier statutes. The overseer of the poor was to have charge of the person, and had power to confine. The estate of the lunatic was chargeable with his support. The foregoing statutes all seemed to take cognizance of lunatics only who had property. There is nothing said of the pauper lunatic. Section six of this statute says "*the overseers of the poor shall take charge of the body of any person so insane;*" that is to say, when any person had been certified lunatic by the Circuit Court;

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but this provision seems only to have been exercised when the person had property.

The law of 1867 made the verdict of a jury indispensable to the admission of a patient to the asylum at Jacksonville. It left the commitment of the insane just about the same as it was by the earlier laws, but was more definite in matters of detail.

This was substantially the law until the statute of 1874 gave us the act which has served us until the present.

It will be seen that each subsequent enactment has conformed closely to the law of 1823. The only difference has been in detail.

It has seemed to me that while the present law of commitment is defective in many ways, its chief hardship lies in the fact that it compels the attendance of the insane person, requires a trial by jury, and that no discretion is given the county court to conduct the trial of the case excepting in the regular court room. We have already instanced the effect of such a spectacle in our city; how much more serious these objections are when we have a feeble patient, in the rural districts, where the patient must be taken often for miles across country in an open wagon.

As it is precisely this quality of the law that so commends it to the lay mind and one which they think is so signally efficient in preventing the incarceration of persons not insane, it is probable that this provision will be the hardest to do away with. As an attorney once said to me that he regarded the provision of trial in open court as one of the greatest safeguards against illegal commitment, and one of the grandest things ever devised in a lunacy law.

I have been at some pains to look up the laws of different states and countries in reference to these points. The only states requiring a trial in the presence of the accused by a jury are Idaho, Colorado, and Illinois. There are, however, some states with modified trials. For instance, Virginia and West Virginia require the trial before two justices of the peace in the presence of the accused, while in other states requiring trial the presence of the alleged insane person may be dispensed with providing he does not care to be present or the judge does not think it necessary.

I have attempted some tabulation of these results but have

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found it impractical, as there was too much variation. By "certificate" in the following summary is meant the commitment by physicians' certificate with or without the approval of a judge or such other modification of this idea as may have been adopted:

ALABAMA. Certificate.

ARIZONA. Requires at least two witnesses shall be present before the probate court, in the presence of one or more physicians, and the court shall hear their statement and then make a personal examination.

ARKANSAS. Probate judge shall hear testimony and cause the person to be examined by two physicians who shall answer certain interrogatories in writing.

CALIFORNIA. Certificate with or without attendance.

COLORADO. Jury trial required. Presence not expressed in statute.

CONNECTICUT. County judge shall appoint a physician upon whose report the patient may be taken forthwith to the asylum.

DAKOTA. Has "commissioners of insanity" to try cases in each county, who may or may not require the presence of the insane person.

DELAWARE. Court of chancery has charge and may dispense with the presence of the accused.

DISTRICT OF COLUMBIA. Certificate before judge.

FLORIDA. Certificate. No jury trial.

GEORGIA. Certificate.

IDAHO. Requires presence of accused in court and trial by jury.

ILLINOIS. Same.

INDIANA. Certificate.

IOWA. Commissioners who may or may not require the presence of accused.

KANSAS. Jury trial, but presence of accused is discretionary with the court.

KENTUCKY. Requires trial, but presence may be dispensed with if two physicians certify to his condition.

LOUISIANA. Apparently requires the presence of the accused in chambers.

MAINE. Permits insane minors whose relatives will support

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them to be taken directly to the asylum. Other cases, the municipal officers of towns shall constitute a board, and they are required to have certificates of two physicians.

MARYLAND. Jury trial seems to be required, yet it is said that nothing in the act shall prevent the friends of an insane person from providing for his comfort and confining him.

MASSACHUSETTS. Order of judge commits, who may have the accused before him; in case he does not the reason must be stated.

MICHIGAN. Inquest by the probate judge. Presence of defendant not determined.

MINNESOTA. Judge of probate and two physicians form a jury.

MISSISSIPPI. Trustees and superintendent of the asylum may receive without proceeding in lunacy.

MISSOURI. Before judge of probate. Presence may be dispensed with.

MONTANA. Jury appointed consisting of two citizens and one physician, to examine the accused.

NEBRASKA. Commissioners may dispense with the presence of the accused.

NEVADA. Certificate.

NEW HAMPSHIRE. Certificate.

NEW JERSEY. Certificate of one physician.

NEW MEXICO. Uncertain.

NEW YORK. Certificate of two physicians good for five days when it must be approved by a judge.

OHIO. Trial required but presence may be dispensed with.

OREGON. Trial by two physicians in the presence of the judge and accused.

PENNSYLVANIA. Certificate.

RHODE ISLAND. Three commissioners appointed for each case, who have power of trial judges.

SOUTH CAROLINA. Trial by judge and two physicians.

TENNESSEE. May be placed in asylum by guardian, relative, friend, or by a justice of the peace, upon the certificate of a reputable physician.

TEXAS. Application of the friend or relative secures admission if accompanied by a certificate of one physician; county judge

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has no other function than to certify to the experience and reputation of the physician.

UTAH. Trial by two physicians and judge. Presence of the accused seems to be necessary.

VERMONT. Certificate.

VIRGINIA AND WEST VIRGINIA. Trial before two justices in the presence of the accused.

WASHINGTON. Presence required before the probate judge, also a physician.

WISCONSIN. Certificate.

WYOMING. May cause the person alleged to be of unsound mind to be brought before him.

ENGLAND. Admission is generally by certificate.

FRANCE. Certificate.

BELGIUM. Certificate.

GERMANY. Like the United States is made up of a number of smaller states and there is some discrepancy in their laws, but generally modifications of the certificate plan are used.

It will be seen from the foregoing that Illinois, Idaho and Colorado have the unique distinction of treating insanity as a crime. I cannot do better in opening this discussion than to quote the objections of the State Board of Charities to the present law.

(1.) The provisions relating to the commitment of patients to the hospitals for the insane seem to be based upon the theory that insanity is a crime, rather than a disease.

(2.) The statute fails to recognize the legal distinction betwen a trial and an inquest.

(3.) The jury provided for is a jury of six, and not a legal jury.

(4.) It is not clear that the law requires that the same safeguards against improper commitment should be thrown around a lunatic committed to a county insane asylum as those which it renders obligatory in the case of lunatics committed to a state institution.

(5.) Chapter 85 prescribes one form of inquest for an insane person whom it is proposed to send to a hospital for treatment, while chapter 86 prescribes a totally different form of proceeding for the determination of the insanity of one for whom it is proposed that a conservator be appointed.

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(6.) The legal status of a person adjudged to be insane in the county court, in respect of his rights as a citizen, is undefined and uncertain.

(7.) No method is suggested for the determination of the restoration to reason of a person once adjudged to be insane, for whom a conservator has not been appointed.

(8.) The law leaves it uncertain whether or not a new trial and a new verdict are necessary for the recommitment of an insane person who has been discharged from the state hospital as not recovered.

(9.) The relation of the judge who makes the order of commitment to the patient, after his reception into a state hospital, is not defined.

(10.) The provisions relating to temporary commitments, pending proceedings and previous to verdict, or after verdict, and pending admission to the hospital, are so vague as to require judicial interpretation.

(11.) Under this act insane persons may be, and are frequently, detained in county jails for an unreasonable length of time.

(12.) There is nothing in the act to prevent the improper treatment and abuse of patients in county almshouses.

(13.) The act directs that insane patients shall be branded as paupers, who are not paupers in fact.

(14.) The only method provided for the determination of the mental condition of a patient in any state hospital, who claims to have recovered his reason, is by a writ of *habeas corpus*.

(15.) A trial by jury is made obligatory in all cases, irrespective of the necessity for it, and of its effect upon the patient, thus entailing unnecessary expense upon the counties, and giving rise to much needless suffering on the part of patients and their friends, besides preventing the early treatment of many insane persons in the hospital, and thus increasing the amount of incurable insanity in this state.

(16.) No authority is conferred upon the county judge to conduct a hearing in an insane case elsewhere than that at the county court-room, even though there are known to be many cases in which the patient cannot be brought to the county-seat without great hardship and risk.

(17.) The law does not provide for the exclusion from the

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court-room, during the trial of insanity cases, of persons not interested in the proceeding, who are attracted to it simply by idle curiosity and the desire to extract amusement out of the misfortunes of others.

(18.) Practically, the medical witness in the case and the medical member of the jury control the verdict, and the non-medical members of the jury simply assent to the conclusion formulated by the foreman. Thus in effect two physicians really pass upon the case, but they are placed in a position where they can evade the responsibility which should properly attach to them.

(19.) The form of medical certificate, including the history of the case, required by this act, is wholly inadequate.

(20.) The law does not confer power upon any officer of the state government to prevent or remedy, by summary process, any wrong which may be done to an insane person by those who have him in charge.

(21.) It contains no provision for the transfer of patients from one state hospital to another, or from a county to a state institution.

(22.) It provides no method for ascertaining the number of insane persons in the state, their condition, or their needs. Those who have been adjudged to be insane cannot be further traced, nor their condition and treatment known, when once they have been discharged from the hospital; but they are left entirely without legal protection.

Every one of these counts in the indictment against the present statute can be sustained by abundant evidence, drawn from the statute itself, from the legislation of other states, and from our personal knowledge of the operation of the law. From every point of view, from the stand-point of the lawyer as well as that of the physician, it is bad law, and very objectionable both in theory and in practice. We are amazed that the legislature should so persistently, and, as it seems to us, without reason or humanity, shut its eyes to the defects in it and refuse to correct them, in spite of every effort made to secure attention to them.

434 W. Adams St.

[*For Discussion see Society Proceedings.*]

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PROPOSED CHANGES IN THE PRESENT LAW REGARDING THE LEGAL RESTRAINT AND DETENTION OF THE INSANE FOR THE PURPOSE OF CARE AND TREATMENT IN THE STATE OF ILLINOIS.

BY SANGER BROWN, M.D.,

Professor of Mental and Nervous Diseases Post-Graduate Medical School, Chicago; Attending Neurologist Cook County Hospital, Chicago; Late Acting Medical Superintendent of the Bloomingdale Asylum, New York; Fellow of the New York Academy of Medicine; Member of the Neurological Society, London; etc.

Read before a joint session of the Chicago Medical Society and the Medico-Legal Society of Chicago, February 16, 1891.

So far as that feature of it is concerned to which I wish to direct attention, insanity may be defined as a disease which so far deprives the person afflicted with it of his capacity to control his personal conduct and attend to his business affairs, that his own welfare and the welfare of society demands that he be subjected to some measure of responsible, judicious and sufficient restraint. Hence it would appear incumbent upon society to make such provisions for the application of restraint as will best conserve the rights and interests of all parties concerned.

Some general principles respecting individual rights, both of the sane and insane, may properly receive attention before proceeding to consider the more definite and particular application of such principles as set forth in a proposed law.

It is undoubtedly the right, if, indeed, it is not the duty of every one to conceal, so far as possible, his personal defects and infirmities, and we justly honor the man who habitually preserves a discreet reticence regarding the defects of his intimate associates. It is almost impossible to assess too highly the value of personal reputation. Shakespeare sets forth this fact most forcibly in the familiar lines:

"He who filches from me my good name, robs me of that which not enriches him, but makes me poor indeed."

Now, however unfair it may be, there is hardly any blow which our reputation might sustain that we would not prefer to insanity, and yet if we have a very wide circle of acquaintances, there is doubtless quite a sprinkling of individuals within it who have recovered completely from insanity, without the fact of their

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having been insane ever becoming generally known. Hence, when by reason of disease an individual is no longer able to protect his interests in this particular, to afford him such protection should be one of the cardinal points for consideration in framing a law for his relief and benefit.

Success in the treatment of insanity, and the same is true of most other diseases, depends largely upon the timeliness and correctness of the diagnosis, and the promptitude with which appropriate curative measures are inaugurated. Hence, the law should provide for the diagnosis being made and the appropriate treatment applied as early as possible by those members of the community best qualified for those purposes, manifestly members of the medical profession; and assuming that legal restraint is essential, the process by which it is conferred should be administered by those members of the community most competent and best qualified to hold the scale of justice fairly between the rights and interests of the insane on the one hand, and of society at large on the other; evidently the judges of our established courts. And as to them must attach the responsibility of pronouncing the final decision, they should be allowed the widest latitude as to the choice of process applicable to each case, seeing to it that those comparatively rare cases, in whom the evidence of insanity is uncertain and doubtful, be investigated with the utmost thoroughness and in all essential publicity, while those in whom the manifestations of insanity are plainly evident, shall be shielded from all unnecessary molestation and exposure.

No person should be deprived of liberty without due process of law, and without being afforded all reasonable opportunity of stating his own case before a jury, providing he be able to conduct himself in a manner consistent with the dignity and purposes of a court of law.

But there are many insane persons who are constantly demanding to be brought into court, who are very violent, noisy, obscene and profane, when to comply with their requests would not be in accordance with the principles of justice, humanity, or common sense.

Finally, ample provision should be made for those who are already under restraint to communicate freely and fully with some properly constituted authority regarding any abuse to which they

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or others confined in the same institution may be subjected, or for the purpose of advancing evidence of their recovery and securing a legal investigation of that question. While provision should also be made for the keeping of a complete record of all legal and medical facts and proceedings concerning the insane.

The present law of this state most studiously violates and ignores all the principles which I have here laid down as essential to the mutual welfare of the insane and of society at large, excepting that feature designed for the protection of sane people from the machinations of evil-minded persons who might attempt, on the ground of insanity, to deprive them of liberty, injure their reputations, or gain possession of their property. The court, the physician, and every one else concerned, is practically prohibited from exercising any discretion in conserving the rights and interests of the insane, or from even responding to the dictates of humane feeling and common sense in administering the necessary legal provisions for restraint.

It is as if a physician were prohibited from using anything but a very large dose of the most drastic purgative for every case of disease requiring medicine; some of his patients would be killed, all would be more or less injured, and for a few the treatment would be properly applicable.

The publicity and exposure incident to the administration of that feature of the present law which requires every insane person to be tried before a jury in open court in order to gain admission to a hospital where he can receive proper treatment, naturally prompts the responsible friends of the patient to employ every available means to exempt him from such a procedure, so that he is either kept at home and thus deprived of proper treatment till every one is worn out in attempting to care for him, and he has become incurable, or he is taken to a hospital without the borders of his own state, where more just and humane laws prevail.

While on the medical staff of the Bloomingdale Asylum in New York, I treated a considerable number of patients from Illinois who had been brought there by loving relatives often at an expense that they could not well afford, in order to avoid the oppression of this very law, and in order to secure a higher grade of treatment than can ever be supplied in a state where such a law is in force. I believe I am credibly informed that several

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private hospitals have been erected just without the borders of this state, equipped for supplying all the more modern and approved methods of treatment, which are designed to give the patient every possible chance of recovery, or as far as possible, to alleviate his sufferings, if he shall be incurable, and that these hospitals are largely patronized and supported by the insane from Illinois who are able and willing to pay for such treatment.

I have here only briefly indicated a few of the more salient objections to the present law, and would refer to the last report of the State Board of Charities for a more complete and concise criticism of it.

I may say here, that all people who have been intimately and closely associated with the problem of protecting and treating the insane in a practical way, are substantially agreed as to the legal measure best suited to the purpose, and in those states where the laws have been prepared by such people as might be expected, the best laws are found, and suffering incident to insanity is reduced to a minimum. In many, indeed in nearly all the states laws formed in accordance with the principles which I have set forth, have been for many years in operation, and with the most satisfactory results. Though as yet none of them may be absolutely perfect, the laws of New York, Massachusetts and Wisconsin may be taken as fair types. With some modifications made in deference to the fear which seems to be prevalent in this state that all its citizens are in imminent danger of lifelong incarceration in some terrible hospital for the insane, the law I am about to propose is the same as those now in operation in the states above mentioned.

On the assumption that a State Board of Commissioners in Insanity is essential to the proper care of the insane, I have proceeded on the hypothesis in what follows, that the State Board of Charities of this State constitutes such a commission without intending to assert the desirability of investing them with such powers.

PROPOSED LAW.*

(1.) When any person shall be, or be supposed to be insane, any reputable citizen and two properly qualified physicians, all residents of the same county in which the supposed insane person

* A modification of the New York law.—ED.

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resides, may present themselves before the judge of the county court in the county aforesaid, and state under oath such facts pertaining to the mental condition of said supposed insane person, as may, in their judgment, render it expedient for his welfare, and the welfare of others, that he be placed under restraint in some duly licensed hospital or asylum for the insane. Such sworn statements shall be made upon printed forms designed for the purpose by the State Board of Charities, and no person shall be eligible to make said sworn statements excepting he shall have seen and examined said supposed insane person within five days prior to the making of the sworn statement aforesaid, and no physician shall be eligible to make such sworn statement unless he hold a certificate from the State Board of Health constituting him examiner in cases of supposed insanity, and filed in the court of the county in which he resides.

(2.) The judge of the county court may, upon hearing the sworn statements aforesaid, and after such further examination of said affiants as may appear to him necessary under the circumstances, and after having caused notice to be duly served upon the person supposed to be insane, as hereinafter provided, express his approval of said sworn statements by signing his name to a form prepared by the State Board of Charities for that purpose, and attached to each of the sworn statements aforesaid, which when thus approved, shall collectively constitute a warrant, conferring upon such person or persons as the court may designate, authority to take and convey the supposed insane person to such public hospital or asylum for the insane as the court may direct, or to such duly licensed private hospital or asylum for the insane as the responsible friends and relatives may choose.

(3.) The approved sworn statements aforesaid when presented to a duly qualified medical officer of a hospital or asylum for the insane by the person or persons authorized by the court to convey the person now declared insane thither, shall constitute legal authority for the restraint and detention of said insane person by the duly constituted authority of the said hospital or asylum.

(4.) If the judge does not regard the sworn statements aforesaid as sufficient to warrant him in conferring authority to restrain, he may take the necessary steps to have the supposed insane person brought before him at such time and place as he

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may direct, or call a jury or summon witnesses, or employ two duly qualified physicians to act as commissioners, with authority to examine the witnesses under oath, to investigate the case and report to him. And in no case shall he confer authority to restrain until he have evidence which to his mind is satisfactory and conclusive that the welfare of the supposed insane person, or the welfare of others demands it. But in all cases the sworn evidence upon which he bases his decision, with his approval attached as aforesaid, shall constitute the warrant by which the person declared to be insane, may be restrained.

(5.) No warrant shall be issued by the court conferring authority to restrain an insane or supposed insane person in a hospital or asylum for treatment, until said insane or supposed insane person shall have been duly notified by the court that such proceedings have been taken, if they were taken in his absence, and without his previous notification, by a form approved by the State Board of Charities, informing him briefly of the decision of the court, and of his right to see the judge or his responsible representative, and state his case. If upon being served with said notice, the insane or supposed insane person express no intelligible desire to state his case in court to the person empowered to serve the said notice, who shall be instructed by the court to afford him a reasonable opportunity for so doing, then the said authority to restrain may be issued and applied. But, if the person serving the said notice in making his return to the court, reports that the person alleged to be insane, made a reasonable demand for a further hearing, then the judge shall conduct such further investigations as are provided for in section 4 of this law.

(6.) Any supposed insane person may, at any stage of any kind of an investigation, for determining the question of his sanity, demand a hearing before a jury, to which demand it shall always be the duty of the judge to accede, and whenever a judge confers authority to restrain without seeing the person to whom such restraint is to be applied, he shall state his reason for omitting to see the person, and said reason shall be stated in a printed form prescribed by the State Board of Charities, and attached to the other papers collectively constituting the warrant for the employment of restraint.

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(7.) The procedure for determining the question of insanity for the purpose of appointing a conservator of the person or estate of a supposed insane person, shall be the same as that already provided for, excepting that in the former case at least seven days' notice of the proposed proceedings must always be given the supposed insane person, and this requirement having been complied with, the appointment of a conservator and the granting of authority to restrain for purposes of treatment, may be consumated by a single hearing.

(8.) The judge of the court before which any form of investigation for the purpose of deciding as to the sanity or insanity of any person alleged to be insane, may be brought, may authorize such restraint of the person supposed to be insane as he may deem expedient for a period not exceeding ten days during the continuance of such investigation.

(9.) No warrant for the restraint and detention of an insane or supposed insane person, shall be valid for such purpose, unless by virtue of it, the said insane or supposed insane person shall have been placed in some hospital or asylum for the insane as herein provided, within ten days after the date of its issue by the court.

(10.) Any jury before whom a hearing shall be had for the purpose of determining the mental condition of any person alleged to be insane for any cause whatever, shall consist of seven competent persons, two of whom shall be physicians duly qualified as examiners in cases of supposed insanity in accordance with the provisions set forth in section 1, and at every such investigation held before a jury, the judge shall preside and the person alleged to be insane shall be present and shall have all the rights of a defendant in any civil action. Said investigation shall be had at such time and place as the court may direct.

(11.) When any person shall have been found insane and a warrant for his restraint and detention issued in accordance with the provisions of this law, two duly authorized copies of the said warrant shall be made, one of which shall be immediately placed on file in the records of the court issuing the same, and the other sent to the State Board of Charities, and when the person so declared insane shall be admitted to any hospital or asylum for

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the insane, the medical officer in charge of said hospital or asylum, shall immediately send notice of said admission to the court issuing the warrant, and to the State Board of Charities, by filling out a blank form provided for that purpose by the State Board of Charities, and when said insane person shall be discharged from said hospital or asylum, the medical officer in charge shall report said discharge, together with the grounds therefor, to the court and board aforesaid, within twenty-four hours of said discharge, where it shall be duly recorded.

(12.) Any letters written by any person held in restraint, according to the provisions of this law, and directed to the State Board of Charities, shall be forwarded unopened, by the medical officer in charge of the hospital or asylum in which said person is confined, with all due expedition, unless on account of the usual irrelevancy of said letters, or for any other cause, the State Board of Charities shall have notified said medical officer in writing, to detain such letters, in which case such written notice shall be filed with the other papers constituting the legal authority by which the writer of said letter or letters is restrained; and whenever any information is laid before any judge of a county court, asserting that any person confined or restrained in virtue or by virtue of authority granted by such court, is no longer insane, and unjustly deprived of his liberty, said judge may cause an investigation to be held in accordance with any of the provisions of this law. But if any reputable citizen and a duly qualified physician shall appear before said judge, and make oath that according to their information and belief said person is not insane and demand an investigation, said investigation shall be made in accordance with the provisions of this law as provided for the determining the existence of sanity or insanity in a person supposed to be insane. If upon said hearing said person is found sane, the judge shall issue an order setting him at liberty; if he be found insane he shall remain under restraint by virtue of the same authority under which he was held prior to such hearing.

There are many other points of interest in reference to legal provision for the insane which need discussion, but time does not now permit me to deal with them.

(13.) It shall not be lawful for any person to testify as to the

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sanity or insanity of a person alleged to be insane, for the purpose of securing his restraint or confinement in any hospital or asylum of which he is an officer or employé, or in which he has any pecuniary interest; but any officer or employé of a hospital or asylum for the insane, may testify as to the sanity or insanity of any person restrained or confined in said hospital or asylum during the period of such restraint or confinement.

CHICAGO OPERA HOUSE BUILDING.

[*For Discussion see Society Proceedings.*]

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Medical Advancement.

SUBSEROUS CONNECTIVE TISSUE.

Messrs. William Anderson and G. H. Mackins (*Journal of Anatomy and Physiology*, October, 1890), discussing "The Planes of Subperitoneal and Subpleural Connective Tissue, with their Extensions," conclude that in these endothoracic and intra-abdominal fasciæ we have a tissue which forms sustentacular sheaths for the vessels and nerves and various organs within the trunk, and which follow them into the intermuscular spaces of the trunk, neck, and extremities. This tissue binds down the invested structures in such a manner as to maintain their due relations to each other and to the walls of the containing cavities, fills up the irregular spaces between them, and conveys to them their vascular and nervous supply. It affords a medium of communication between visceral and parietal vessels and between the vessels of different organs. It has important suspensory functions in connection with the membranous and solid viscera, especially in the abdomen, and it serves as a storehouse for fat. Surgically, according to these authors, it explains the presence of mysterious deep fascial layers, the identity of which has often exercised the minds of operators in the course of the incisions for colotomy and nephrotomy. The relations of these endothoracic and intra-abdominal fasciæ to certain structures outside the thorax and abdomen may account for pleural complications after axillary abscess or ligature of the subclavian artery, and for peritonitis following castration. The laminated structure of the tissue which forms these fasciæ exercises an important influence upon the course of pathological exudations, especially in the mediastina and pelvis. Undue laxity of the tissue may favor displacements of certain organs, as in movable kidney, and also in hernia, as Mr. Lockwood has pointed out. The extrusion of the tissue through normal or adventitious apertures in the thoracic and abdominal

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walls may open the way for hernial protrusions, or may itself constitute a kind of hernia, as in the linea alba and elsewhere. A hernia may be reduced *en masse* between its layers. The tissue may serve as a nidus for fatty tumors and other morbid growths. This memoir contains much food for reflection; much knowledge which the physician and surgeon may utilize. The communication between visceral and parietal vessels, by means of this tissue, is of special interest. It serves to account for the sympathy between the integument and immediately subjacent organs in many diseases, and may explain, to a great extent, the value of poultices in the treatment of inflammation of deep viscera.

TROPHIC CHANGES IN THE NAILS IN MULTIPLE NEURITIS.

Bielschowsky (*Neurologisches Centralblatt*, December 15th, 1890, p. 731) describes a man, aged forty, who presented the symptoms of peripheral neuritis. In the course of the illness several white spots appeared at the lower part of the finger nails. They rapidly grew, and in two or three weeks there were milk-white patches stretching across the nail. There were no similar changes in the nails of the toes. Except for these alterations, there were no other changes in the nails. There was not the loss of smoothness which has been described. The streaks across the nail remained milk-white in the middle, but became reddish towards the ends. The borders of the depressed streaks were straight. When these streaks had grown near enough to the end of the nail they were cut off. The microscopical examination did not show anything of importance.

POST-MORTEM APPEARANCES AFTER KOCH'S TREATMENT.

Professor Chiari, of Prague, gives (*Prag. med. Wochenschr.*, No. 52, 1890) the results of *post-mortem* examinations made by him in three cases of phthisis in which Koch's treatment had been employed. In all the tuberculous foci in the lungs there was great accumulation of leucocytes, with considerable fibrinous exudation round about. In the affected parts of the lungs, and in tuberculous ulcers in the intestine, there was marked hyperæmia, and in some instances signs of hæmorrhage. There were large masses of tubercle bacilli in the bronchial tubes, and on the

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bases of the intestinal ulcers. In short, the appearances indicated abnormal exudative inflammation around the tuberculous foci, and (perhaps in connection with this process) a tendency to the expulsion of tubercle bacilli in the lungs and intestine. Chiari's observations on the whole agree with those of Cornil as to the effects of Koch's treatment in lupus. They seem to show that reactive changes such as hyperæmia, occasionally causing hæmorrhage, infiltration of leucocytes, and exudation, take place in the tuberculous foci in the lungs in the same way, though not to the same degree, as they do in the skin. Further observations over an extensive field, and in particular careful comparison of the *post-mortem* appearances found in cases subjected to Koch's treatment with those in other cases are, according to Chiari, necessary before any general conclusions as to the exact effect of the remedy can be drawn.

ANTIPYRIN IN CHOREA.

In a paper recently read before the Société Médicale des Hôpitaux de Paris (*Bull. et Mém.*, December 25th, 1890), Dr. Charles Legroux states the results of the treatment of chorea by antipyrin in sixty cases observed throughout their course. He found that antipyrin had a beneficial effect in two-thirds of the cases, rapidly diminishing the intensity of the disease, and shortening its duration; recurrence, however, took place in three-fifths of the cases. In the cases in which the drug failed this was found to be due in some instances to intolerance (vomiting, diarrhœa, etc.), or to cutaneous eruptions; in a few cases the drug appeared to have no effect on the disease. He found it necessary to give large doses, and to reach the maximum dose in a short time. Between the ages of six and fifteen, doses as high as three to six grammes (about ℥iss to ℥iii) a day were well tolerated for several weeks. Serious symptoms of poisoning were never observed, and in some cases in which an eruption or vomiting was at first noticed, when the use of the drug was resumed after a short interval these symptoms did not recur. None of the cases treated had any rheumatic symptoms, but none were of a serious character.

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HÆMOPHILIA AT THE MENSTRUAL PERIOD.

Dr. C. Townsend (*Boston Med. and Surg. Journal*, November 26th) had recently under his care a healthy, well-developed and intelligent girl of thirteen. Some of her family were "bleeders." When an infant, the slightest bruise caused considerable subcutaneous effusion of blood. She bled freely when a little child when cut, or when bitten by insects. Epistaxis was frequent, but ceased after the safe and successful removal of mucous polypi. The joints never became swollen. A "show" appeared at thirteen, and three napkins were stained two weeks later. A week later serious menorrhagia set in, with blanching and faintness. Restlessness, nausea, vomiting, and intense thirst, with rise of temperature occurred; as she tossed in bed ecchymoses formed on the shoulders and elbows. As the patient became dangerously exhausted and as the vomiting continued, an enema (one raw egg with three ounces of peptonized milk) was given every three hours. Milk and lime water was administered when the vomiting ceased, and by the end of the week she took beef tea and milk as well as the enemata. The thirst did not diminish till about the fifth day of treatment. A tampon, inserted when the flooding was severe, was removed three days later; a slight discharge continued for nearly a week. At the end of ten days the girl was fairly well. It is not stated whether the troubles recurred at succeeding periods. Osler has already noted that in female members of hæmophilic families neither menstruation nor parturition is specially dangerous, and Dr. Townsend notes that other authorities are of the same opinion, according to their own experience.

THE ACTIVE PRINCIPLE OF CASTOR OIL.

The active principle of castor oil has never been satisfactorily determined in spite of many researches on the subject. Buchheim stated long ago that it was ricinoleic acid. This acid exists in the oil combined with glycerine, and in its combined condition is perfectly bland and unirritating. Buchheim was of opinion that the fat was saponified in the alkaline duodenum; the ricinoleic acid was set free, and then acted as an irritant and caused purgation. This theory has, however, often been disputed. Professor Hans Meyer comes now to its support (*Archiv. f. expt.*

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Path., xxviii. 1890). He isolated pure ricinoleic acid, and he also formed ricinoleate of glycerine, a neutral fat. Experiments made with these on cats and men showed them to be as active as castor oil. Ricinoleic acid is rapidly absorbed from the intestinal canal, hence it only acts for a short time, and hence repeated small doses have not a cumulative action as in the case of other unabsorbable purgatives. This is also the reason why castor oil is so safe and mild a purgative, and why it can be used in small amount (as it is in China) as a cooking and table oil. Buchheim also experimented with a derivative of ricinoleic acid, which he termed ricinelaidic acid. He found it to be inactive. Meyer, however, shows that its inactivity depends on its high melting point (122° F.), and on its coherence, which prevent it being broken up and saponified. When he gave it in fine emulsion it acted as powerfully as castor oil.—*British Medical Journal.*

REMOTE RESULTS OF SYPHILIS.

Dr. B. Tarnowsky (*Der Kinderarzt*, October, 1890) gives, according to his experience, very gloomy evidence as to the results of syphilis on succeeding generations. He makes out that seventy-one per cent. of women suffering from syphilis either give birth to dead children or bear children who die within a year. He records the terrible history of three families where the fathers had contracted syphilis six, five, and four years respectively before marriage. All these men appeared to be cured when they married, and all their children were born healthy; yet of these twenty-two children only one grew up to be a healthy man; five were premature, three died of meningitis before attaining their second year, two were imbecile, one an idiot, one a cretin, one had numerous signs of degeneration, one was weak in intellect, one sexual perversion, two hysteria, one epilepsy, one was born deaf, two had hydrocephalus. Of the thirteen still alive when these statistics were taken, eight were incapable of working for their living, the remaining five being sickly and nervous. All three families were of the respectable commercial class; none of the children were exposed to the hardships which in the case of peasants and artisans may cause infantile diseases falsely attributed to syphilis. Dr. Tarnowsky has collected other histories scarcely less dreadful. He concludes

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that syphilis in a parent may be the cause of a long series of the most serious diseases — scrofula, rickets, nerve disorders, etc. — and the offspring at the best are often weak, useless members of society. Carlblom, of Riga (*ibid.*), gives the history of a healthy couple who married. Their first child was healthy and long remained so. The second, born healthy, died of trismus at the end of a week. The third, born sickly, died of tetanus within a week. The couple were then medically examined. No trace of disease was found on the mother, but extensive mucous tubercles were discovered around the anus in the father. The couple were sent to Aix-la-Chapelle. The mother was treated mercurially during a subsequent pregnancy. She bore a healthy child, who remains in good health. Then the firstborn child, previously healthy, developed symptoms of hereditary syphilis, which were speedily cured by mercurial friction.

PILOCARPIN IN SKIN DISEASES.

Dr. KLOTZ (*Journ. of Cut. and Genit. Urin. Dis.*, November, 1890) treated cases of eczema with daily hypodermic injections of ten to fifteen drops of one per cent. solution of muriate of pilocarpin. The first case was that of a man, aged twenty-eight, who had suffered for several years from eczema. The skin showed no great infiltration in any part of the body, but was dry, hard, resistant, and slightly scaling. After the first injections the reaction was very slight, moderate moisture appearing on some of the less affected portions, but it generally became more distinct, and after about twelve injections a general secretion of sweat was produced. The patient left the hospital after the seventeenth injection. The scales had almost entirely disappeared, the skin was much softer and more pliable, and showed "more natural turgor and elasticity," itching having become very insignificant. The second patient, aged twenty-one, suffered from eczema squamosum and rimosum of both palms, which were covered with a very hard and thick horny skin divided by numerous cracks. Other treatment having failed, daily injections of pilocarpine were given, the patient at that time being unable to bend or close his fingers. After nineteen injections perspiration, which had previously appeared on the forearms, wrists, and backs of the hands, now appeared for the first time on the palms. June 1st

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the horny condition of the surface of the palms had entirely disappeared, the skin looked natural, showed all the ridges and indentations of the surface, and was soft and pliable, and the patient could move and close the fingers without any pain or difficulty. A third patient suffered from a general papular eczema, which was attended with considerable thickening on the flexor aspects of both elbows. Over the chest and abdomen and in a milder degree on the extremities the skin was hard, dry, slightly scaling, dark brown in color, with numerous small hard papules of a somewhat lighter color. The patient left the hospital after eight injections, at which time the skin had lost a great deal of the dryness and hardness, the papules had been greatly reduced in size, and the itching had almost disappeared. In the discussion at the meeting of the American Dermatological Association which followed the reading of this paper Dr. Hardaway stated that his experience of this treatment in ichthyosis, eczema, alopecia, and pruritus was not such as to lead him to continue it.

INFLUENZA AMONG HORSES.

British Medical Journal, Jan'y 3d, 1891. As in the human subject, equine influenza is abrupt in onset; the transition from health and activity to prostration and profound depression is sudden. The temperature rises from the normal to extreme hyperpyrexia (106° or 107°), and often falls as suddenly as low as 97°, the normal temperature of the horse being 100°. Three well-marked varieties of the disease have been described by Dr. George Fleming, C.B. The first, which is apt to be pandemic, is catarrhal in type, and affects especially the bronchial tract; as many as ninety per cent. of the horses in a locality are often affected, the mortality being from two to four per cent. Although closely allied to influenza as it affects the human subject, it is not identical, and seldom coincident with, the epidemic among men; as pointed out in Dr. Symes Thompson's recent *Historical Survey of Influenza*, horses are generally afflicted a few weeks before men. The second form is "equine pleuro-pneumonia." It is more insidious and less widespread than the first form, and is apt to become endemic, as in the Regent's Park Barracks, from which it is rarely absent for a year. It is attended with high mortality, and is followed by protracted convalescence, it is often

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accompanied by gangrene of lung, and is associated with the presence of a diplo-bacterium capable of inoculation in mice, and is allied to septicæmia. The third variety is erysipelatous in character; the digestive organs, as well as the skin, are affected; it is allied to anthrax. The ass is exempt, cats and dogs suffer but rarely. It is thought by Dr. Fleming that the microbe is capable of propagation outside as well as inside the body, like that of malaria. As regards treatment, care in nursing and ventilation are regarded as of the greatest importance; quinine being the most valuable medicine. How far the epidemic pleuro-pneumonia above described and the erysipelatous type of disease are justly to be styled influenza is a question needing the attention of veterinary surgeons.

PROGRESS OF CREMATION IN ENGLAND.

The Cremation Society of England has now existed seventeen years. The crematorium and the buildings at Working have been thoroughly tested, and are in every respect efficient and commodious. The appearance they present to the eye—a combination of early Gothic architecture, extremely well executed, surrounded by beautiful trees and shrubs—is, especially in summer time, picturesque and pleasing. During the past year no fewer than fifty-four bodies have been cremated. Among them may be named the late James Nasmyth, the distinguished engineer, a generous supporter of the Society; the well-known Rev. J. MacNaught, of Liverpool, and the late Baron Huddleston, on which last occasion the service, performed in the Society's chapel by the Rector of Ascot, was attended by a distinguished assembly of relatives and friends. The Society is earnestly asking for support to complete their plan of erecting cloisters for the reception of cinerary urns. For this, and also for the purpose of promoting the interest of cremation, by publishing, lecturing, etc., the Council of the Society urgently appeals to the public for donations and annual subscriptions. It may be as well to add that a payment of ten guineas constitutes the donor a member for life, and entitles him to be cremated without charge after death. Since the beginning of the present year 1891, the remains of Kinglake, the historian, and of his Grace the Duke of Bedford, K.G., have been cremated.—*British Medical Journal.*

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EPIDEMIC ALOPECIA.

M. Bourguedieu (*Annales de Derm. et de Syph.*, November, 1890, p. 923) states that an epidemic of alopecia areata commenced in a brigadier attached to the infirmary of a regiment who had suffered from the disease since July, 1888. From the end of May to the end of July, 1889, forty-four cases of alopecia developed, almost all the patients being troopers, the officers and non-commissioned officers being almost entirely exempt. A farrier and the veterinary assistant were attacked, although they had not been in contact with the men suffering from the disease. In them the affection might perhaps be explained by their having been in contact with the horses, several of which presented a depilation of the tail and mane in the form of bare circular or elliptic smooth plaques, without vesicles or pustules. The hairs, before falling, became dry and powdery. The alterations in the hairs of these animals were found greatly to resemble those of human alopecia areta (atrophy of the bulb, thinning and forming into a cross at the extremity of the hair, absence of parasites). Hairs were examined in October, when many horses were casting their coats. The healthy animals had no smooth plaques, the hairs did not come out in tufts, and the atrophic lesions were less pronounced than in the horses which had the bald plaques.

TREATMENT OF TINEA TONSURANS.

Dr. Simpson recommends the following treatment for ringworm of the scalp and body: Cut the hair short and wash the scalp well with tincture of green soap, and then apply the following solution with a camel's-hair brush:

℞

Hydrargyri chlorid. corrosiv. ..... ʒi
Collodii ..... ʒi

M.

This treatment may be recommended for three reasons: 1. The corrosive sublimate destroys the fungi. 2. The ether of the collodion penetrates to the root of the hair, conveying the corrosive sublimate to the seat of the disease. 3. The film formed by the collodion shuts off the supply of oxygen to the fungi and thus helps to destroy them.—*Medical Record*, Feb. 14, 1891.

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NEPHRECTOMY FOR HÆMOPHILIA RENALIS.

Professor SENATOR reports an interesting case of hæmophilia renalis in a girl aged nineteen years. The diagnosis was made positive by the family history and the exclusion of organic cause of the hæmaturia. A hereditary tendency existed in the family of her father, who made matters worse by marrying a relative.

The seat of the bleeding was located in the right kidney by Dr. Nitze by means of an endoscope, through which he saw the blood escaping from the right ureter.

Since all medicinal measures to check the hæmorrhage failed and death by asthenia seemed unavoidable, nephrectomy was performed. The hæmaturia promptly ceased, the wound rapidly cicatrized, and four weeks after the operation the patient was discharged cured.

The excised kidney was normal, both macroscopically and microscopically.

In addition to this report, Senator reviews the two other cases of nephrectomy for obstinate hæmaturia, which have been reported, and believes that in these cases also hæmophilia was the disease, though that diagnosis was not made. In both cases life was saved apparently by the operation.

From these cases and the fact that the tendency to bleed is often confined to certain regions or organs (mostly to the nose), Senator concludes that, besides a general constitutional disease, there exists another form in which the faulty nutrition and condition of the vessels are strictly localized. This condition may be inherited as such or may appear with the development of the body.

This view opens an important therapeutic field, namely, that of removing the focus of danger, if necessary, by surgical means.—*Berlin. klin. Wochenschrift*, January 1, 1891.—*Medical News.*

AUTO-TOXÆMIA.

Professor V. JAKSCH, in an introductory lecture upon the clinical significance of toxæmia, distinguishes two groups of toxæmia, namely, exogenous and endogenous. Of the latter he recognizes three main varieties, as follows:

1. The toxic agents are normal products of tissue-interchange,

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abnormally retained in the body (uræmia, toxæmia from acute intestinal obstruction, etc.).

2. They may be the outcome of pathological processes, which change the normal course of assimilation of food and tissue-interchange, so that instead of non-toxic, toxic matter is formed. This group he names nosotoxicoses, which he subdivides into two principal divisions:

(*a*) The carbohydrates, fats, or albuminous matter, which may be decomposed abnormally and give rise to toxic products, *e. g.*, diabetic intoxication, coma carcinomatosum.

(*b*) A contagium vivum enters the body through the skin, or the respiratory or digestive tract, and develops toxic agents in the tissue on which it feeds, as in infectious diseases.

3. The toxic substance results from pathological non-toxic products, which again produce the toxic agent only under certain conditions.

This group he calls auto-toxicoses, and includes in it poisonous substances (diamine, toxalbumin) resulting from decomposition of the urine in the bladder, under certain pathological conditions, and giving rise to the condition called ammoniæmia.—*Wiener klinische Wochenschrift*, December 25, 1890.

INTESTINAL ANTISEPSIS.

Dr. Fere (*Sem. Med.*, Feb. 4th, 1891) pointed out before the Societe de Biologie that by keeping the intestinal canal antiseptic by the administration of naphthol and salicylate of bismuth, large doses of potassium bromide would be readily tolerated by patients who otherwise resented it. In some cases the bromide was pushed to seventeen grammes (over half an ounce) daily. He suggests that the measure would be valuable in guarding against medicinal eruptions generally, and might be useful in the employment of the iodides and arsenic.

ARISTOL.

1. Aristol has been used in a pure state in sclerosis and other ulcerations in the male and female genitals. After washing the ulcers with carbolic or sublimate water, the aristol was powdered on and covered with gauze. In ulcers on the glans penis it is necessary to remove the bandage frequently on account of

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priapism; in these cases iodoform has the advantage over aristol. In syphilitic and indolent ulcers or chancres the latter acts exceedingly well. Great cleanliness is necessary, especially about the female genitals. In fresh cases aristol has no advantages over iodoform.

2. Aristol was made use of with the best results in acute otitis media and otorrhœa in place of boracic acid, in lupus laryngis, laryngorrhœa, in ulcerations of the penis, and ulcers of the leg. In burns aristol (with oil or lanolin ten per cent.) relieved pain, and caused rapid cure.

Aristol possesses the advantages of iodoform, and can even be used in children, with whom iodoform must be used carefully.

Aristol has not a penetrating odor like iodoform.—*Journal of the American Medical Sciences.*

TREATMENT OF GOITRE BY GALVANO-PUNCTURE.

Dr. James Hendrie Lloyd (*University Medical Magazine*, December, 1890) reports four cases of follicular goitre treated by galvano-puncture. The first case was of several years' duration in a woman sixty years old, and was cured by fourteen punctures, each sitting lasting about twenty minutes and the current-strength averaging between fourteen and eighteen milliampères. During each application the gland tissue became swollen around the needles, sensitive to pressure, and gas, probably hydrogen, crepitated from within and escaped from the punctures. The surrounding skin was reddened and occasionally the points of puncture were distinctly burned because of defective insulation. For a day or two after the operation the gland would be very sore and on several occasions threatened to suppurate, but this it never did.

The second case was that of a young woman in whom a goitre had been present for about eighteen months. Punctures were made at intervals of a week "for a long while," the current-strength varying from fourteen to twenty milliampères. On one occasion severe inflammation of the gland and of the skin for some distance downward followed. When treatment was stopped the gland was shrunken, hard and gristly, and has remained so for three years.

The third case was not so satisfactory, partly at least because

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the goitre was an enormous one of many years' standing, bulging on each side and reaching almost to the ears. Very large veins ran over the surface and through the gland structure. The patient discontinued her visits before the results of treatment could be determined.

The fourth case declined to submit to treatment after the first application of the needles.

The apparatus used for the punctures consisted of three small gold-plated needles insulated to within one-third of an inch of the point. These were connected by a branching cord, so that all could be attached to the negative pole of the battery. The method of operating was as follows: The needles were inserted into the tumor far enough to protect the skin by the insulating material, care being taken to avoid veins. The positive pole was connected with a large, flat, sponge electrode. Thus resistance was reduced as much as possible and a strong current made possible without too much pain. But even with this precaution the skin under the sponge became at times much reddened, and in one instance blisters formed. An accurate milliampèremeter was kept in the circuit and constantly observed, and a water rheostat was used to avoid shocks.—*Medical News.*

SYMPATHETIC OPHTHALMIA.

From a study of the recent literature of sympathetic ophthalmia, together with some personal observations upon the disease, E. MEYER arrives at the following conclusions:

1. Sympathetic ophthalmia of one eye appears only after traumatism of its fellow, either with or without penetration. The infectious nature of the traumatism appears to play an important *rôle* in the process.

2. The experiments of Deutschmann and the observations on experimental sympathetic ophthalmia of Gayet are not proof that the disease in man is not transmitted by way of the optic nerves, although they demonstrate the anatomical possibility of that transmission.

3. The results of the autopsy on the case published by Becker (*Archiv. f. Psychiatrie*, xii. 1) furnish anatomical proof of a sympathetic ophthalmia in man without alteration of the optic

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nerves. The possibility of the transmission in man by the ciliary nerves, or by other avenues, must be considered.

4. Enucleation of the eye primarily injured, the visual function of which cannot be preserved, is the most certain way of preventing sympathetic ophthalmia. Nevertheless, enucleation, practiced even within the twenty-four hours following the injury, will not always prevent the development of inflammation in the other eye.

5. Opto-ciliary neurotomy is indisputably useful in eyes the vision of which is lost by irido-choroiditis—inflammatory, not traumatic—or by absolute glaucoma. It is inefficient in preventing sympathetic ophthalmia.

6. Resection of the optic nerve cannot as yet be regarded as sufficient to prevent sympathetic ophthalmia. In one case of resection, sympathetic ophthalmia developed fifteen days after the operation.—*Revue Générale d'Ophtalmologie*, November 30, 1890.

TREATMENT OF SNAKE-BITES.

In the *British Medical Journal*, January 3, 1891, Dr. T. Lauder Brunton briefly reviews the physiology of death from snake-bites, and makes some possibly useful suggestions in regard to treatment. As is well-known, death from the bites of rattlesnakes and cobras is by respiratory paralysis. Laboratory experiments have shown that animals poisoned by the cobra virus may be resuscitated by artificial respiration and kept alive for many hours, but that they finally succumb. The same result occurred in one case in man, the patient dying in a few days from pneumonia. Mueller has recommended strychnine in large doses as an antidote to snake venom, and as it is a powerful respiratory stimulant we may very reasonably hope for benefit from its use, but one grain, as has been recommended, is dangerous. It should be given in small, frequently-repeated doses, its effects being carefully observed. But the depression of the respiration and the heart are not the only effects of the poison, and violent vomiting, hæmaturia, and bloody stools are sometimes very marked symptoms. Strychnine will not counteract these effects of the poison, and, in order to prevent their occurrence, we must endeavor to aid its elimination. In trying to determine what

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channels serve this purpose it seemed to Dr. Brunton that elimination takes place through the salivary glands and the mucous membrane of the stomach and intestines.

Fayer and himself found that the cobra venom had an extraordinary irritant action on mucous membranes, and when it was introduced into the stomach of a frog it caused most violent vomiting, very unusual in that animal. This experiment suggests that the vomiting which forms such a prominent symptom in many cases may be due to the poison being excreted by the mucous membrane of the stomach in much the same way as tartar emetic or apomorphine would be. If this hypothesis is correct we can readily understand why partial recovery may occur if the case is treated with artificial respiration, and yet death ultimately occur. For if the poison were eliminated into the stomach and intestines by the mucous membrane, recovery would follow; but if the venom, instead of being removed from the stomach as quickly as it was excreted, were to remain there and undergo absorption, the symptoms would return and death would ensue. It therefore seems that one should try, if possible, to remove any poison that might be eliminated, and this might be done by washing out the stomach with alcohol in some form; for example, whisky or brandy. The want of means has prevented Dr. Brunton from trying this method, but the hypothesis seems to explain the good results obtained by the free use of whisky or brandy internally. It is not the action of these substances on the nerve-centers that prevents death from the venom, for men bitten while drunk have died from the bite, although it is usually stated that if a man can be made drunk after he has been bitten his life will be saved. This would seem to indicate that the whisky or brandy acts locally in the stomach, coagulating any venom which may have been excreted and preventing re-absorption. The plan that should be tested is to keep up artificial respiration, and wash out the stomach with whisky or brandy. It is obvious that this plan might be combined with the subcutaneous injection of strychnine, and that, while the circulation and respiration are maintained by strychnine, alcohol might be freely given, and after it had been removed by vomiting or the stomach-tube, it could be repeated. This plan is not without danger, and it should first be tried in a laboratory, for large quantities of brandy or whisky

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might, by their strongly irritant action in the stomach, lead to reflex depression of the circulation and fatal shock, to say nothing of gastritis in case of recovery.—*Medical News.*

THE DIAGNOSTIC VALUE OF TUBERCLE BACILLI IN THE SPUTUM.

Fussell, in 1887, published the results of his examination of the sputum for tubercle bacilli in one hundred cases of pulmonary disease, and concluded that the presence of the bacilli was proof positive of the existence of tuberculous phthisis, while their continued absence was good, though not positive, proof of the absence of phthisis.

Fussell and Keily (*Univ. Med. Mag.*, 1890, iii. 85) now publish a further series of 65 cases, in which the examination of the sputum confirms these conclusions. Of the 65 cases, 44 had undoubted physical signs of phthisis; 4 had doubtful physical signs, yet tubercle bacilli were found in all. The authors give the further clinical history of these 4 cases, which later progressed as ordinary cases of phthisis.

Eight cases had no physical signs of phthisis, and bacilli were absent from the sputum of all of them. Nine cases had doubtful signs, and bacilli were absent in all. These 9 cases were of especial interest, since in some of them it seemed exceedingly probable that phthisis was present. All of them, however, recovered.—*Jour. Amer. Med. Sciences.*

GUERMONPREZ'S METHOD OE REDUCING BACKWARD DISLOCATIONS OF THE FEMUR.

Dr. Catoir describes Guermonprez's method of reducing backward dislocations of the femur as follows:

The pelvis is fixed by the left hand of the operator placed upon the iliac spine, his right hand then grasps the patient's leg, the knee being in a position of extreme flexion, and forcibly flexes the slightly-abducted thigh until its anterior surface rests upon the abdomen. To-and-fro movements of inward and outward rotation are now executed until the head of the femur rests against the acetabulum, when direct pressure, either by the hands of an assistant or the knee of the operator, completes the reduction. During the last part of the manipulations the extreme

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flexion of the thigh upon the abdomen should be slightly relaxed. The method is most useful in old cases, and particularly when the operator is without assistance. Guermonprez employed it [presumably successfully] under anæsthesia in an iliac luxation of eight weeks' duration, having on the previous day rendered the head of the femur mobile by means of flexion.—*Annals of Surgery*, December, 1890.

TREATMENT OF DANDRUFF.

Dr. EDWARD CLARKE (*Lancet*, December 27, 1890) describes the following method of treating persistent dandruff. The method is that practiced by Dr. Shudham, and has given excellent results. The head should be well washed with hot water and alcohol soap (pure soft soap, two ounces; alcohol, one-half ounce; oil of lavender, ten minims). The soap is then washed away with hot water, and the scalp thoroughly dried by means of a warm, soft cloth, Glycerole of tannin of a strength of from ten to thirty grains to an ounce, according to the obstinacy of the case, should then be well rubbed into the scalp. If tannin fails, resorcin may be used in its place. This process should be repeated once or twice a week. After the dandruff has disappeared the scalp should be rubbed daily with olive oil, containing in each case ten grains of carbolic acid and one drachm of oil of cinnamon.

THE LEGAL CULPABILITY OF THE "CRIMINAL INSANE."

"The True Test," by HENDERSON M. SOMERVILLE, late of the Supreme Court of Alabama (*Medico-Legal Journal*, Dec., 1890). I have read the paper of A. Wood Renton, Esq., of London, on "The Legal Test of Lunacy," with great interest. This interest is emphasized by the fact that the subject is one which is now, more and more every day, inviting the attention and research of the most advanced thinkers in the medico-legal world.

The writer speaks of the "silent revolution" which is now going on in reference to the doctrine of the legal culpability of a class commonly designated, for want of a better nomenclature, as the "criminal insane." The readers of the *Medico-Legal Journal*, especially for the past three or four years, cannot fail to be struck with the truth of this observation. The number of papers

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recently published therein from the most learned alienists in this country and in Europe forcibly attest the fact. Germany, always in the vanguard of scientific as of religious thought, has long since formulated in her criminal code of laws the proposition that "there is no criminal act, when the actor at the time of the offense is in a state of unconsciousness, or morbid disturbance of the mind, through which the *free determination of his will is excluded.*" (Code of Germany, § 51, R. G. B.) The Code of France, as now interpreted by the courts of that country, is, in substance, the same. The legal profession in each of these countries has advanced to the progressive view, for the maintenance of which the medical profession had battled vigorously for more than a quarter of a century.

The same contest is now going on in this country and in England. It is the same old fight of Science against the crystallized prejudices of error and ignorance. The united medical world, with comparative unanimity, proclaim as a discovered fact that the wards of insane hospitals are crowded with inmates who are capable of distinguishing right from wrong, and who yet, through the influence of brain-disease, are rendered powerless *to choose* the one and refrain from the other. I instance the following extract from the last *Biennial Report* (1889) of Dr. Peter Bryce, who has been the Superintendent of the Alabama Insane Hospital for the past thirty years, and is recognized as one of the foremost alienists in this country in the treatment of the insane. It voices the views of his profession:

"The thousand patients," he observes, "now under treatment in our own hospital, and thousands of others who have filled its wards during the past twenty-eight years, furnish unmistakable evidence, even to ordinary observation, of the fact that persons of diseased brains, affecting the mind, may be capable of distinguishing the moral and legal quality of a criminal act, and yet not be able to abstain from its commission. They know the right from the wrong, and do not hesitate to avow it, but they cannot choose between the two, and often deplore this inability to control their actions. It would, it seems to me, be a backward step, in both humanity and science, to place these victims of disease in the same category with ordinary convicts in whose behalf no such plea can be interposed. The whole question is one of *disease, or*

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no disease, to an extent which practically destroys the patient's power of self-control. The medical profession," he concludes, "is almost unanimous in its repudiation of the right and wrong test of this disease, and the interests of society, humanity, and science would, in my judgment, be promoted by the adoption of the same view by our courts of justice."

The case of *Parsons v. The State*, 81 Ala. 577, alluded to by Mr. Renton, was decided by the supreme court of Alabama in June, 1887, having thus been promulgated about two years before Dr. Bryce's report. To this case he alludes, and gives it his earnest endorsement. The doctrine of that deliverance was a repudiation of the "right and wrong test," as adopted in McNaghten's case, decided by the English judges, and the indorsement of the modern view that no insane person, who, through disease of the brain, has lost the power to choose between the right and wrong, and to avoid doing the act in question, is legally culpable or accountable.

This decision is merely a step forward in the direction pointed out by modern medical science in its relations to the subject of insanity. It was long ago announced by the learned Dr. Ray, of England, who approved the charge in Haskell's case, in these words: "The true test lies in the word *power*. Has the defendant in a criminal case the power to distinguish right from wrong, and the *power to adhere to the right and avoid the wrong?*"

CARCINOMA MAMMÆ.

BIHLER (*Münchener Dissertation*, 1890) reports the results of forty operations made by Angerer. In each case the entire gland was removed, and the axillary space was cleaned out whether the enlarged glands could be felt or not. In most of the cases the pectoral fascia was removed and in the later cases a portion of the muscle itself. In cases of relapse the masses, if movable, were removed with the knife, when the gland was affected, and with large tumors, they were excised with the thermocautery after the method of Nussbaum.

The results to date are: Dead 65 per cent., 12.5 per cent. live but the disease has returned. In 20 per cent. there has been no return of the trouble; among these are three in whom more than three years have elapsed since operation, and two in which more than two years have passed.

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Editorial.

ANNOUNCEMENT.

The Committee on Publication, after some years' experience in publishing the transactions of the Chicago Medical Society in various ways, has decided that the most feasible plan is to publish the proceedings of the Society in a monthly, and incorporate with the proceedings such social and scientific news items as will be of interest and value to the members. The past labors of the Committee have been arduous, abortive and thankless, but they have been of value inasmuch as they have demonstrated to the Society the fact that a great many valuable scientific papers have been ignominously buried in a local journal, and the Committee has been thoroughly convinced of the urgent necessity of the Chicago Medical Society controlling its own publication. The Committee desires that The Record may encourage a fuller attendance at the meetings of the Society, more social intercourse between the members, a more eager spirit of investigation. In order that the proceedings of the Society may become of more than provincial interest, the scope of the journal has been enlarged, so as to embrace the various departments found in first-class medical periodicals. To this end an editor has been chosen and the committee is confident that the wisdom of the selection will become apparent as the various issues of The Record appear. The Committee asks the co-operation and hearty support of every member of the Chicago Medical Society, and the profession at large, in making our monthly Record a grand success.

The Committee on Publication.

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SANITATION IN PUBLIC CONVEYANCES.

In large cities the majority of the adult population and practically every male citizen is compelled daily to spend more or less time during a large share of the year in the closed street cars or other public conveyances. This is peculiarly true of physicians, and as they are, in a measure, the guardians of the public health, the sanitary requirements of such vehicles call for their personal consideration aside from any individual interest, which, however, is not to be overlooked, for health is a large part of a physician's capital. This question has recently received the attention of the good people of Indiana. "In Indianapolis," according to the *Medical Record*, "an ordinance has been passed which compels all railroad companies to put storm doors on all railroad coaches and street cars for the carriage of passengers, to keep the temperature from 68°–70° in the cars, and to furnish spittoons partly filled with a solution of bichloride of mercury, for the use of persons suffering from chronic cough and expectoration." There is nothing said about ventilation and tobacco chewers are apparently overlooked. It is possible that the horse car conductors in Indiana will be able to enforce this rule against the subjects of chronic cough and expectoration, and if needs be make a physical examination of the passengers in case of doubt.

However, the underlying principle is a good one, asserting as it does the rights of the public, which are sometimes overlooked by railroad companies.

The over-crowding and ill-ventilation of these vehicles is unquestionably the source of some ill-health if impure air is the potent cause of throat and lung troubles frequently asserted. One, for instance, in going down town from the South Side in Chicago during the busy morning hours is compelled to enter and remain for a half hour or longer in a car, possibly holding double the number of passengers for whom seats are available. The air space of a car seating thirty-two persons is less than fifteen

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hundred cubic feet. Into this, by actual count, from sixty to seventy are often crowded, giving each less than twenty-five cubic feet of breathing room without making deduction for the space actually occupied by the passengers. With this the doors, windows and usually all the trunk lights are closed tightly and a stove assists in devouring the little oxygen to be had. A fair amount of air space in hospital construction with good ventilation by which the air can be entirely renewed thrice every hour and properly warmed without draughts is six hundred feet *per capita*, or twelve times what is allowed a person on a street car, and twenty-four times what he gets when the car is overloaded, not to mention the lack of renewal.

The character of the air should also be noted. In the hospital estimate a pure atmosphere is stipulated. In the street car, unhealthful upholstering, the dust of the street, which according to recent estimates by M. Miguel contains several millions of microbes to the *gramme*, the emanations from the skins and lungs of many persons, some of whom may be actually affected with contagious disease, make up an atmospheric picture from the microbic point of view beside which the most lively hallucinations of delirium tremens pale into insignificance. This atmosphere has also physical properties readily detected by the sense of smell which alone condemns its use by the cleanly disposed.

To expect an allowance of six hundred cubic feet of air space in street or steam cars is of course out of any reasonable question, but the profession can do much to educate the public for their own good in the direction of demanding enough cars to accommodate all passengers with seats even during the busy morning and evening hours, an obligation laid on such corporations at least by implication in their charters. It is needless to point out that in Europe this regulation is everywhere enforced very strictly, to the enhanced comfort of the passengers and probably to the betterment of the public health.

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Obituary.

Dr. Hosmer Allen Johnson was born in Wales, Erie Co., New York. For ten years he enjoyed the advantages of a home filled with elevating influences, and daily contact with the ennobling phenomena of nature. The impress of these early advantages was at all times noticeable in his character. These influences acting upon a mind of large calibre and fine mold made a clear-headed student, an accurate observer, a ripe scholar and a perfect instructor.

More than this they made; for in him one found a true friend, a philanthropist, an ideal citizen and a wonderful physician.

He was a great man. He assisted to found the Chicago Academy of Sciences, the Astronomical Society, and the Chicago Medical Society, and did all he could to encourage the study of natural objects.

At the age of about ten years he removed to Almont, Mich., and helped to cut a farm out of the woods, at a time when wolves and Indians were far more abundant than civilized beings. During this period an attack of sickness resulted in an irritation of the bronchial tubes which never fully left him, and caused many of his acquaintance to suppose for fifty years that he was on the verge of consumption.

There was, however, not the slightest tendency to tuberculosis in any part, but the pulmonary irritation subjected him to repeated attacks of pneumonia, and it was one of

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these which at last caused his death at the age of sixty-eight years.

In his early manhood he expected only a short life and scarcely dreamed of attaining the age which he finally reached.

In the year 1841 he entered an academy at Rome, Mich., where he prepared for college. He then entered the University of Michigan from which he graduated in 1849.

His educational career showed a remarkable talent for the acquisition of languages both ancient and modern. He studied Latin, Greek, Hebrew, French, German, Italian, and to some extent Spanish. In his boyhood he also picked up from the Indians a considerable knowledge of Ojibway.

Three years after taking his degree of A.B. he received that of A.M. and at a later period that of LL.D.

After graduation he came to Chicago and commenced the study of medicine under the supervision of Prof. Herrick. In 1851 he became the first interne of Mercy Hospital, and in 1852 graduated in Rush Medical College.

In 1853 he became a member of the Faculty and continued with it until 1858, when he resigned. Not long after his resignation he united with a few others in founding the Chicago Medical College, in which he was a professor and trustee from the beginning to the day of his death, and was the first president of the Faculty.

He was for some years editor of the *North-Western Medical Journal*, and afterward a member of the City, State and National Boards of Health. During the war of the rebellion he was commissioned by the governor, with the rank of major, as one of the Board for Examining Surgeons and Assistant Surgeons for the Illinois regiments,

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and such was the faithfulness of the board that the medical officers of the state were conspicuous in the whole army for their thorough knowledge and their humane and skillful conduct on the field of battle. In examining assistant surgeons for promotion, he had to traverse the field of war, and his duties brought him occasionally under fire, at which times he showed his skill as an operator and as a manager of field ambulance service. After the great Chicago fire, Professor Johnson was one of the chief managers of the Relief and Aid Society, which distributed millions of dollars of property among the sufferers.

He married Miss Margaret Seward, a relative of the New York statesman, William H. Seward. He had two children, of whom only one survives him, Dr. Frank S. Johnson, professor of Pathology in Chicago Medical College. Dr. Johnson was much more than simply an eminent physician. He was a magnificent man, possessing a clear, trenchant intellect and a great and noble heart. His reputation is without spot and his honor without stain.

EDMUND ANDREWS.

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Society Proceedings.

THE CHICAGO MEDICAL SOCIETY.

Regular Meeting February 2, 1891.

The President, Dr. Frank Billings, in the chair. After the minutes of the preceding meeting were approved, the Committee on Membership reported favorably on the applications of Drs. W. H. Rohr, Geo. H. Cleveland and James B. Herrick, who were upon motion elected by acclamation.

The applications of Drs. Ignatz Lange and M. M. Leahy were read and referred to the Committee on Membership.

Dr. Casey A. Wood read a paper entitled "Herpes of the Face and Cornea." (See page 15). In discussing the paper Dr. Zeisler said

Mr. President: The reading of this paper reminds me of a very interesting case of herpes zoster which I saw after the case had terminated as such. Dr. Hotz had the kindness to send the case to me on account of the peculiar sensitiveness or itching sensation that remained over the whole left side of the forehead, and which was very disagreeable to the patient. I made a peculiar observation in this case, and I would like to ask Dr. Wood whether, in studying the question, he has found anything similar remaining after herpes zoster terminated. I found on the left side of the forehead, where the disease had evidently been present, perfect insensibility, so that a needle could be stuck into the skin very deeply without the patient knowing anything at all about it. This peculiar insensibility to pain was very remarkable when taken with the great itching sensation that was present in the same area. The observation may be explained somewhat, if we remember the experiments which Goldscheider made to show that there are different points in the skin corresponding to the terminating nerve filaments which answer to different sensations; certain points receive the sensations of heat, certain other

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points that of cold, others of pain, and perhaps others of itching and so on. This case seemed to me, from a clinical standpoint, to be a proof for the experiments of Goldscheider which show that the different nerve terminations in the skin have different and peculiar functions.

Dr. N. P. PEARSON. Mr. President: I would like to ask Dr. Wood to tell us what he thinks might be the cause of this neuritis. I always like to hear a little about the cause.

Dr, CASEY WOOD, in closing the discussion, said: In answer to Dr. Zeisler I will say that I have seen the anæsthesia which he speaks of, but only in one case of a severe type; I fancy from the description he has given of the case that it was a true case of herpes zoster ophthalmicus, complicated with the pruritis. The anæsthesia, it seems to me, may be explained by what we know of the pathology of the disease; there is probably in these severe cases of herpes zoster ophthalmicus a true paralysis (due to the neuritis) of the sensory nerve, and therefore we would expect anæsthesia to be present. How to account for the itching, I hardly like to say; I fancy Dr. Zeisler's explanation is the correct one.

In answer to the other question, I would say that the neuritis is due to the same causes which bring about the tonsilitis, the pneumonia or inflammatory febrile condition, whatever that may be. Of course the old-fashioned theory that sudden changes of temperature in the skin are capable of producing neuritis is not very difficult to believe; for myself I think that changes in temperature may bring about alterations in the nerve endings of an inflammatory character.

Dr. JOSEPH ZEISLER read a paper on "Some Common Errors in the Diagnosis of Diseases of the Skin." (See page 21.) In its discussion Dr. H. N. MOYER said: Mr. President: I have listened with a great deal of interest to Dr. Zeisler's paper because I remember an experience of my own. I was also a pupil of Prof. Kaposi, that is, I sat in his clinic for eight months, and fortunately I had a front seat. I was amazed at the facility with which that man would read the history of a skin eruption from the surface of the body; tell how long the patient had had it, tell what the symptoms were, and, in fact, would give a complete and perfect clinical history without asking a question.

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Sometimes he would ask the patient to confirm it and sometimes not, generally it was not necessary. This excited a great deal of surprise in my mind and I had a very earnest desire to emulate such precision. I attended his clinic every day and also had a private course in skin diseases from his first assistant, a very able dermatologist, and at the end of that time I had an opportunity to go into the wards, and one day as a matter of curiosity I went through with one of the internes to make a diagnosis in skin diseases. The patients were presented, and without any previous history I made my diagnosis; my percentage of failures was forty-five. I gave up then and have not studied skin diseases enthusiastically since.

Dr. JOHN A. ROBISON. Mr. President: I have been very much interested in Dr. Zeisler's paper, and I would suggest that he give us a paper on the differential diagnosis between urticaria simplex and pruritis hemialis. I believe I reported to this Society about two years ago a case that I diagnosed as annually recurring urticaria; that case still recurs each year. As the cold weather approaches this young woman has her eruption each night. It is a very interesting case, and I think I will try and persuade her to see Dr. Zeisler and have him make a diagnosis and report to the Society whether I made a mistake or not, and suggest a treatment.

DR. A. R. REYNOLDS moved to amend the Constitution, first by repealing the amendment to Section 8, Article IV., which was adopted June 2d, 1890, and second by introducing a new amendment empowering the Committee on Publication to employ an editor who shall be responsible for the publishing of the Society Transactions, and who shall receive for his work as editor an honorarium of not to exceed two hundred dollars per annum. The motion was unanimously carried.

Dr. H. N. MOYER read a report of the committee appointed for the purpose of influencing the American Medical Association to continue the publication of its journal in Chicago, and recommended the passage of the following resolutions, which were unanimously adopted:

RESOLVED, That the Chicago Medical Society as a body is opposed to the removal of the Association Journal, deeming that such change is

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unnecessary, at the present time, and contrary to the best interests of THE JOURNAL and the Association; and be it

RESOLVED, That the delegates from this Society to the forthcoming meeting of the American Medical Association, be and are hereby instructed to oppose such removal; and be it further

RESOLVED, That the committee appointed at the last meeting be continued to take such action as they deem wise, in furthering the object of this resolution; also that a copy of these resolutions be spread upon the records, and transmitted to the medical press of the country.

There were in attendance forty-five members and visitors. On motion the Society adjourned.

JUNIUS C. HOAG, *Secretary.*

JOINT MEETING FEBRUARY 16, 1891, OF THE CHICAGO MEDICAL SOCIETY AND THE MEDICO-LEGAL SOCIETY OF CHICAGO.

On motion by President DOERING of the Medico-Legal Society, Dr. FRANK BILLINGS, president of the Chicago Medical Society, took the chair.

Dr. HAROLD N. MOYER read a paper entitled "Past and Present Laws Regarding the Legal Restraint and Detention of the Insane for the Purpose of Care and Treatment" (see page 29).

Dr. SANGER BROWN followed with a paper on "Proposed Changes in the Present Law Regarding the Legal Restraint and Detention of the Insane for the Purpose of Care and Treatment in the State of Illinois" (see page 38).

Dr. JAMES G. KIERNAN closed the presentation of the subject by reading a paper on "Newspaper Reforms in Insane Asylums"*

Dr. EDMUND J. DOERING, President of the Medico-Legal Society, at this point took the chair.

In opening the discussion on the above-named papers Dr. D. R. BROWER said:

Mr. President: I hardly think it is worth while for me to take any time in talking to you about the unfortunate defects of our present law; it seems to me that must be manifest to every person in this room. The gentlemen preceding me have forcibly brought this question before us: They have mentioned the great wrong done to delicate women in dragging them to court, the great

*Not Submitted to Publication Committee.—ED.

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wrong done to families in exposing things that ought to be kept quiet, revealing skeletons in the closets, and the effect of the whole is to convert a case seemingly curable into one that is incurable. There is another feature in this law, which has been dealt upon somewhat, and that is, that it is no protection to the people. It is just as easy to have a sane person adjudged insane under this law as under the flimsiest law that can be devised, and the number of sane persons who have been committed under this law is greater than under the preceding law. In a recent visit to one of our insane hospitals, my attention was called to a person who had been brought there a few days ago perfectly sane, but committed by the county court of Cook county as insane. The law is no protection to the people and it is a serious injury to the insane.

One of the gentlemen preceding me remarked that the real verdict was given by a doctor or two doctors. That is not always the case. There is one doctor on this jury of six persons and the balance are laymen; I have time and again seen the five laymen decide against the one doctor. In a trial I had a few years ago of a young lawyer, three times he was declared sane by a jury in the Cook county court; the fourth time, after he committed a most outrageous breach of the peace, he was adjudged insane and he is now in an insane hospital absolutely incurable, but for two years he was at large and during this time passed beyond the period of curability. He was a promising young man who had just graduated from the law school, and he was rendered permanently insane by the absurdity of this law. How are we going to remedy it? Dr. Kiernan has told you of a lady, who is now at Springfield, and just the moment the Medical Society starts this agitation she goes to Springfield and stays there and she has more power with the legislature there than the entire medical fraternity in the State of Illinois. I quite indorse Dr. Kiernan's classification of her. It may be that Dr. Kiernan's scheme of having a committee to investigate the whole question is the best one. We must formulate some law that will satisfy the opposition, and it has occurred to me that, defective as the present law is, it may be sufficient to simply ask the legislature to give the judge discretionary power, in cases that do not demand a jury trial, to order an investigation by a commission of physicians at some

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other place than the court-house—the home of the patient, if you please; this commission to be empowered to compel attendance of witnesses, and to report their opinion to the judge who will issue the necessary commitment.

In my personal work in this city I have avoided the law. I have never sent any of my clients for treatment to the hospitals of this state, as highly as I esteem them, if they have the dollars and cents to take them out of the state. Dr. Sanger Brown has had some patients I sent to Bloomingdale, and I have sent them to Wisconsin, to Ohio, to Michigan, wherever they could be placed. I think it is wrong for us to submit delicate women, or curable cases in men to the outrageous consequences of this law, if they can possibly raise the money to go elsewhere.

This matter has been engaging my attention for the last ten or twelve years and I don't see that we are any nearer its solution to-day than we were twelve years ago when it was first agitated by this and the State Society. I suggest, Mr. President, that you appoint a committee of five to whom can be referred these several bills, with power to modify them as they deem best and present this modification to the legislature at their earliest convenience.

Dr. Richard Dewey. Mr. President: I can hardly add anything to what has been said, but may speak as a medical officer of one of the state insane hospitals and give you some idea of the way this matter looks to those in charge of these institutions. The superintendents in the different state insane hospitals could have no personal interest in or desire for the change in the law, so far as their own convenience might be concerned. The law as it stands at present relieves them of a considerable amount of responsibility and solicitude to which they would be subject if the changes that have been proposed, and that we would all be glad to see made, were brought about. I speak from a knowledge of the opinions of superintendents of other insane hospitals as well as my own opinion, being familiar with these facts, when I say that it is from an interest in their patients, from a desire to have that which is for their welfare done, that we are united in our wish to see modifications made in the present lunacy law, and especially in the jury commitment. One of the evils which the jury commitment brings about is brought forcibly to our attention at the

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state insane hospitals, that is, the delay in commitment which constantly takes place from the unwillingness of friends of those who are insane to take them into the court room to be made a public spectacle. I have no hesitation in saying that every year a large percentage of the patients admitted to the state insane hospitals have become hopelessly insane through the delay of their friends in committing them. If they could have committed them in the early stage of the disease, when it was curable, without their being taken into court in this way, they would have done so, but that lion stood in the path—something that no family or friends of the patient are willing to face, and often the patients themselves shrink from it. The result is that these cases go on until they become chronic, until the friends and family become completely worn out in their efforts to care for the patient at home, or else exhaust the means they possess in having them cared for in some private institution or outside the borders of the state, and then when nothing more can be done, and in despair, these patients are brought to the state insane hospitals. I believe that the percentage of cure would be raised by a large fraction, speaking from long personal experience, by a change in the law, which would leave the jury trial within the reach of any who might wish for it but not compelling all to submit to it.

There are innumerable points in which the present law might be improved. They have been laid before you and I will not attempt to dwell upon them, except the single one relating to cases where there has been an evasion of the penalty for crime through the plea of insanity. What is called the "insanity dodge" is practiced to a great and increasing extent throughout this state by criminals who, well knowing that they are or will be soon within the clutches of the law, take occasion to have themselves brought before a jury in court and tried, perhaps upon some trivial offense, with manufactured testimony, before a jury that is necessarily a poor judge of insanity, and secure a verdict of insanity, and are thus sent to the insane hospital. There is a case in point about which considerable comment is being made just at present. Many who are present may have noticed some account of young Spellman, who jumped out of a car window the other night while being brought from St. Paul by a United States officer to be tried here for

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robbing the United States mail. That young man was committed to the institution of which I have charge, about three months ago, from Bloomington, and after being under my care and observation for a sufficient length of time so that I was fully satisfied he was not insane, I discharged him. I retained him long enough to become satisfied that he was not subject to periodical insanity with lucid intervals, and I also satisfied myself that he was not an epileptic patient who, as you are aware, may be impelled by insanity to commit a crime, the epilepsy perhaps remaining undiscovered, being of the nocturnal variety, or the attacks being infrequent. The point that I wished to bring out in reference to this young man, is this: that there were various charges, and indictments had been, I subsequently learned, found against Spellman in this state, at least two or three, and there were crimes for which he was wanted in this and other states. It seems to me that in view of cases like this, one addition should be made to the present law, namely: that in all cases where a person is guilty of crime and on a plea of insanity is sent to the insane hospital, if that person is found not to be insane and discharged, it should be made obligatory upon the officers of the law to notify the authorities of any hospital to which that criminal goes, of the indictments under which he may be for previous crimes, and then it should be made obligatory upon the superintendents in charge of such insane hospitals to notify the proper authorities whenever they find such person not insane, so that he may not be released from the asylum and go altogether free, but on being released may be taken into custody and placed on trial for the crimes which he may have committed.

Then there is the inconsistency to which Dr. Kiernan has referred, of two courts finding diametrically opposite verdicts in reference to the same individual. The probate court having charge of the property may hold a person to be insane who has been released upon habeas corpus from some other court. It may happen that a judge releases a person on habeas corpus whom he believes not to be sane, and he may notify the probate court that the man whom he himself released, is still insane and should not be given control of his property. There should be such modifications of the law as to secure uniformity between all courts under this law.

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Dr. ARCHIBALD CHURCH. Mr. President: It is not my purpose to detain you, or to enter into the discussion, for the very good Hibernian reason that there is no discussion; we are all on the same side of the fence. It is a misfortune that there is no opportunity for argument, and I was greatly in hopes that Judge Prendergast would be present this evening, because four years ago he was an ardent supporter of the present law. I believe, however, he has modified his opinion. I wish here to pay a tribute to him for his conduct of the insane court in this county. There are many in this audience who can testify how he has smoothed down the rough and cruel angles of this law; of cases where he has sent a jury to the house to see some unfortunate woman; of cases tried in his chambers, and of other cases where he has sent the jury down to the curbstone to take a casual glance into the carriage window, and for all these things he is entitled to admiration and respect. It was, however, in absolute defiance of the regulations of the law under which his court held session. I wish also to thank him for modifying and improving the condition of the Detention Hospital of this city. Some six or seven years ago a greater blot upon this community could not be found. Its cells were reeking with vermin and filth, and patients in charge of ignorant and even epileptic attendants. I have seen an old woman of sixty years dying on a pallet on the floor, nearly naked, with no bed coverings, locked in a cell, in the care of a male attendant, with blood oozing from her nostrils, in the last gasps of life, and not a hand to smooth out her form. Some improvement has been made, and almost entirely through the efforts of Judge Prendergast, but much remains to be done. Therefore what I wish to say in regard to his court you will understand does not apply to the gentleman who has just presided over it, for lawyers and judges, as well as citizens, must bow to the laws, although they do not necessarily worship them.

Some years ago it was my duty to attend that court every week, and I do not exaggerate the situation one jot when I state that on a certain day, and it was only a typical day, between the hours of 10 and 11:30 A. M., fifteen cases of insanity were tried and disposed of in that court, which, by a simple calculation, you will see, allows each one six minutes. Now if the rights of citizenship and liberty and the control of property can be taken

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from an individual in six minutes under the present law, what further demonstration do you want that it is absolutely wrong. That day was not an unusual day, for in this county every Thursday sees on the average about thirteen cases tried for insanity within an equally short period. This is the way this law works in large communities. How is it in rural districts?

I have seen a man suffering, unfortunately for him, from acute mania, shackled hand and foot and then placed in a great canvas sack which was tied around his neck and in that condition carried thirty miles to the county seat, and subsequently, on the same day, brought fifty miles to the asylum, without any opportunity to attend to the calls of nature. I have found that man one mass of bruises from the top of his head to the soles of his feet, and I have seen him succumb in six days, and I attribute it to this treatment. When you have seen such things under this law it needs no argument to show that it is not the law for this time and this community. When you have seen a woman who scarcely stood five feet high bound and tied with forty feet of rope that had been used to tether a cow, and in that condition, held down by four men, carried in an open wagon twenty miles to be tried, and still in that condition brought to the asylum, you will realize that this law is not a beautiful thing. When you have seen a man taken from within a stone's throw of a State Institution, shackled hand and foot and carried twenty miles to the county seat, struggling with all his might the entire distance, and immediately brought back the same distance in the same plight, in a closed carriage out of which he had managed to knock all the glass, his legs sticking out of one window and his head out of the other, cut and maimed, bruised and bleeding, with scarcely any clothing left upon him, and have seen him die within twenty-four hours, you will understand that this law is not the humanitarian triumph it is claimed to be.

I recognize the situation Dr. Brower points out, I know of the efforts made to remedy this abomination and barbarity, but while we are comparatively helpless, I think we should still turn our faces against this cruelty and put ourselves here upon record for what is better. I do not wish to take up your time, but there are many other things I could report from my own experience which would outweigh the motives that build up our anti-vivisection

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societies and our societies for the prevention of cruelty to animals; unfortunately they come under the observation of only a limited number and consequently have no popularity, they do not furnish that sentiment, that pseudo-philanthropy that is wasted upon curs in the street, but they are equally important.

At the close of the session I will venture to present resolutions asking this meeting to put itself on record against the present law, and in favor of a law similar to the one in Massachusetts, New York and Wisconsin.

Dr. C. W. EARLE. Mr. President: I have nothing to say in the discussion; but as a considerable number of the members probably have not read the proposed law* referred to, I would like to read Section 5, because, as far as I know, almost everybody is in favor of it, and it meets the indications, in one direction at least.

"SECTION 5. Inquests in lunacy shall be by jury or commission at the discretion of the court: *Provided*, that such inquests shall always be by jury when a jury shall be demanded by the person alleged to be insane or by any person acting in his interest."

So far as I know all the physicians who devote themselves to nervous diseases, or have care of the insane, are in favor of that section. I have heard that some of these gentlemen are a little opposed to granting additional powers to the State Board of Public Charities. I see, however, that Dr. Sanger Brown is not opposed to that, and if I understand his paper correctly, he would be willing to give them greater power. I would like to ask as a member of the committee from the State Society that has this matter in hand, whether if we can get simply this one clause, Section 5, made a part of the law, is it not worth while for us to try to get along, even if we have to give to the Commission of Public Charities a little more power than my colleague, Dr. Brower, would like them to have?

Dr. D. R. BROWER. Mr. President: I do not want to be put on record as opposing the Board of Public Charities. I do not oppose them, but I am of the opinion that the efforts to enlarge their powers through this lunacy law will meet with opposition

*House Bill 5555; introduced by Mr. Partridge, Jan. 13, 1891, entitled, A Bill for an Act to revise the law relating to the commitment and detention of lunatics.—ED.

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which will defeat it. I am not personally opposed to extending the power of the Board of Public Charities, but I believe the bill Dr. Earle has brought to your attention so greatly enlarges their powers that it will meet with an opposition that will defeat the main proposition. All we want, I conceive, is the privilege of having certain of these insane persons tried at their homes by a commission of physicians. We want simply to modify the present law so as to give the judge power to have a commission of physicians appointed to go to the person's house, try the case and report to him. The Board of Public Charities has nothing to do with this question; the Judge of the County Court has the power to determine it. It is a legal question and a medical question and should be decided by the judge and one or more doctors; the judge should have charge of the legal aspects of the case and the doctors of the medical aspects of the case. I don't see where the Board of Public Charities comes in. It is neither a lawyer on the one hand nor a doctor on the other hand.

Dr. D. W. Graham. Mr. President: I would not presume to criticise any of the bills that have been proposed or read here this evening. I have listened, however, to all that has been said, for I am interested in the subject. I do not know exactly how this matter came before this meeting to-night, but probably all the members do not know that the Illinois State Medical Society at its last meeting discussed this subject in all its bearings and a committee of five was appointed to take the proper steps towards getting an improvement of the laws relating to the commitment of the insane as well as to secure other legislation for the benefit of the insane. This committee of five was instructed to secure the co-operation of all the medical societies through the state. I see two members of that committee here to-night, and it may be that the bill Dr. Earle has referred to and quoted came from that committee. At least I hope that whatever may be done by this meeting will be in the line of co-operation.

I would take exceptions to what has been said here two or three times. Dr. Brower, for instance, says we are utterly powerless to do anything. I do not agree with him at all. I believe the medical profession in this state can secure the passage of any law that is reasonable if they will simply pursue it as other classes of citizens pursue any measure they seek to have incorporated in the

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laws of the state. I am sure that if a few prominent physicians in every senatorial district in this state would take a little active interest in the matter and talk fifteen or thirty minutes with their representatives, that any law could be passed that the sentiment of the profession would agree upon. It would be simply child's play to sit here and pass resolutions. The average legislator is a reasonable man, but, like others, a busy man; and what he lacks is information such as we are able to give and ought to give him as an individual, instead of firing a set of resolutions at the legislature as a whole and at long range.

Dr. JAMES G. KIERNAN. Mr. President: I have had considerable talk with several members of the legislature and my experience is that they are not opposed to the present law. We must remember that we are not dealing with an ordinary question but with a question about which an immense amount of newspaper claptrap can be written. There is a female paranoiac in Springfield armed with a recommendation from every newspaper proprietor in this city, who will work tooth and nail against a modification of this law. It is all very well to assume the great power of the medical profession, and perhaps if it did not involve a piece of sensational news we might do something. I would suggest the method adopted in New York, that is, to recommend the appointment of a commission at this legislature to investigate and report upon the whole subject to the next legislature. On the report of that commission laws could be framed that could not be passed now; one argument of that paranoiac would be stronger than those of a dozen physicians. She would say, "Oh, the physicians report that because they want to put people in the lunatic asylum and get paid for it." Dr. Graham has not familiarized himself with insanity legislation or he would know that in all English-speaking nations this claptrap has been brought up year after year. I hope the Society will pass some of Dr. Church's resolutions, and also that a committee will be appointed to request a commission to investigate the subject of insanity, which will be given power to investigate the whole subject, especially as to what provision will be needed in the future for the insane.

There is one point about the State Board of Charities which should be considered, that is, that State Boards of Charities when allowed too much power run mad. We have a sample up in

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Wisconsin; the result is that two-thirds of the asylums in Wisconsin are entirely out of physicians' control. The Wisconsin State Board asserts that insanity is not a disease, it needs purely moral surroundings in the shape of almshouses to lead to recovery. That has been the result of giving the State Board of Charities too much power. Dr. Brown has referred to New York, but there is one physician, a commissioner of lunacy, who has certain powers over and above the State Board of Charities. The commissioner is Dr. Carlos Macdonald, and most of what has been done in New York of late years to improve the condition of the insane has been done by Dr. Macdonald. What would be the result in our own state where we have a layman for secretary? We would have the old story over again—the physician has not any business capacity, let us put a layman over him. The insane who recognize their condition and are desirous of being committed to the insane hospital should be looked after to some extent under a modification of this law. I agree with Dr. Brower that the best thing to be done at present would be to have a commission appointed by this legislature to which the whole matter could be referred, this commission to report to the next legislature. I have arrived at this conclusion after considerable talk with several members of the legislature, particularly with one senator, who has promised me that he would introduce a resolution for that purpose as soon as this senatorial contest gets out of the way.

Dr. Sanger Brown. Mr. President: I do not think of anything I can add to what has been said. My paper was directly in conformity with the main idea advanced by Dr. Brower and Dr. Earle; indeed I would be willing to drop all the rest if that object could be accomplished, that is, discretionary power allowed to the judge. I believe the position of judge is elective; elect a humane man, and the humane feelings of almost any man brought in close contact with the subject will be pretty apt to lead him right and to stand up for the rights of the insane. I think that a state commission is highly desirable, but as I stated in my proposed law, only in a hypothetical way did I invest the State Board of Charities with that function. I have not been long enough a resident of the state to know the best way to provide for such a commission, but I think it would be valuable in collecting the various facts from all over the state, in presenting

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a report, in visiting and inspecting hospitals and getting wide views so as to make suggestions. I know that such a commission has been very valuable in New York and has done a great deal to inspire public confidence that the insane are being properly cared for, that there was some one to whom the insane could appeal. But of course if such a commission is not properly conducted it can run into abuses.

Dr. CHURCH offered the following resolutions:

WHEREAS, It is the sense of this meeting that the present law for the commitment of the insane to hospitals for their care and detention at present in force in this state often inflicts needless suffering upon this unfortunate class, sometimes actually operating against their recovery, and imposes unnecessary distress upon their friends and relatives; be it

RESOLVED, That the Illinois law in this matter should be modified and made to conform somewhat to the regulations now for years in successful and satisfactory operation in the states of New York and Wisconsin, which provide adequate protection to the individual, to the community, and to all interests, rights and privileges involved; and be it further

RESOLVED, That a copy of these resolutions and the proceedings leading to their adoption be distributed as soon as possible to the members of the legislature now in session at Springfield.

On motion these resolutions were adopted.

Dr. Brower moved that the Chair appoint a committee of five to be selected from both societies to confer with the committee appointed by the Illinois State Medical Society for the purpose of modifying state legislation in the matters touched upon in the foregoing resolutions. He further moved that the above committee be instructed to take the initiative in such similar matters as it might deem proper to consider.

This motion was carried and the Chair appointed as such committee Drs. D. R. Brower, Sanger Brown, Archibald Church, Wm. E. Clark and Sarah H. Stevenson.

The applications of Drs. David J. Doherty and J. F. Oaks for membership in the Chicago Medical Society were read and referred to the Committee on Membership.

There were in attendance sixty-five members and visitors.

On motion the Society adjourned.

JUNIUS C. HOAG, *Secretary.*

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Reviews.

BACTERIOLOGICAL TECHNOLOGY FOR PHYSICIANS; with Seventy-two Figures in the Text. By Dr. C. J. SALOMONSEN. Authorized Translation from the Second Revised Danish Edition by William Trelease. New York: William Wood & Co., 1890. Chicago: W. T. Keener. 8vo., pp. 122. Cloth, $1.25.

THIS very admirable and altogether practical little work is written for physicians who want to work at home without elaborate apparatus or great expense. To many who have not had time, opportunity or inclination to become familiar with the processes of bacteriological examinations, now such an important factor in pathological considerations of all sorts, it will furnish much information. To the individual worker its directions and clearly-worded methods will be a real help. To the practitioner who only uses a few tubes for diagnostic purposes it will be most welcome.

FAMILIAR FORMS OF NERVOUS DISEASES. By M. ALLEN STARR, Professor of Diseases of the Mind and Nervous System, College of Physicians and Surgeons, New York; with Illustrations, Diagrams and Charts. New York: William Wood & Co., 1890. Chicago: W. T. Keener. 8vo., pp. 340. Cloth, $3.00.

THE title of this book is misleading, somewhat, for in fact familiar forms of nervous disease play the most unimportant part in its make-up, but it is none the less valuable. It is practically a resume of the work done in the neurological department of the Vanderbilt Clinic, with sufficient additions to make the sections complete. The opening chapters deal with cerebral and spinal cord localization and indications for surgical interference. This portion of the work is especially valuable. The chapter on multiple neuritis is a reproduction of the author's article on that subject in Wood's Reference Hand-Book. Dr. Starr is skeptical

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regarding the therapeutic value of electricity, but gives a very clearly-written chapter on the subject. Suspension in Locomotor Ataxia is presented by Dr. Skinner, Chorea by Dr. Vought, Paralysis Agitans and Ordinary Forms of Insanity by Dr. Peterson, assistants to Dr. Starr at the Clinic.

PATHOLOGY AND THERAPEUTICS OF THE DISEASES OF WOMEN. By Dr. AUGUST MARTIN, Instructor in Gynecology in the University of Berlin. With 210 illustrations. Translated from the second edition by Dr. Ernest W. Cushing, Boston, 1890. Chicago: W. T. Keener. 8vo., pp. 682. Cloth, $6.00.

THIS the second American edition of Dr. Martin's clinical lectures, to any one not reading the German cannot fail to be a valuable acquisition. Those who are familiar with Dr. Martin's personalities will not be surprised to find his book at once practical and intensely German. American, English and French workers in this field are practically ignored. For instance in the introduction under the heading "Electro-Therapeutics of Myomata," only Veit is mentioned, and Apostoli is relegated to a foot note of a half dozen words in the body of the work. The dexterity, the magnificent results, the unswerving routine of the author are known to all who have visited Berlin. He cannot be regarded as a safe teacher or as the best example of German gynecologists, but this work is not open to the same objections. He has been extremely fortunate in his translator, and the insertion of the plates, which accompanied the work when first published in the *Annals of Gynecology* as a supplement, add great value to the text and beauty to the volume. It is made up of nine sections as follows: I. Physical Examination of the Patient; II. Physiology and Pathology of Menstruation and Conception; III. Pathology of the Vagina and Uterus; IV. Operations in the Vagina; V. Operations on the Uterus; VI. Diseases of the Tubes; VII. Diseases of the Broad Ligaments; VIII. Diseases of the Pelvic Peritoneum; IX. Diseases of the Oravies. There is also an Introduction by the author bringing up to date the subjects of Dilatation of the Cervical Canal; Treatment of Chronic Metritis; Ventro-Fixation of the Uterus; Massage of the Uterus; Electro-Therapeutics of Myomata; Supra-Vaginal

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Amputation of the Uterus; Tubal Pregnancy; Vaginal Extirpation of the Uterus and The Technique of Laparotomy. The make up of the book is of the best and no practitioner giving much attention to the operative diseases of women will be without it.

CYCLOPÆDIA OF THE DISEASES OF CHILDREN, MEDICAL AND SURGICAL. THE ARTICLES WRITTEN ESPECIALLY FOR THE WORK BY AMERICAN, BRITISH AND CANADIAN AUTHORS. Edited by JOHN M. KEATING, M.D. Vol. IV. Illustrated. Philadelphia: Lippincott Company, 1890. Chicago: W. T. Keener. 8 vo., pp. 1128. Cloth, $5.00.

WHEN two years ago the prospectus for this magnificent work was submitted the realization of its promises seemed almost impossible, but with this the final volume the profession possesses a store of recent information in regard to everything pertaining to childhood that, while almost limitless, is yet most practical and available. The American profession is to be congratulated that such a monumental work has originated among them, and under its able editor has been so rapidly completed. This volume deals with diseases of the ear, eye and nervous system, while part three discusses the subject of hygiene. Under these divisions and appropriate sub-heads the peculiarities of the various affections as seen in infancy and childhood, often rapidly passed over in a general treatise, are strongly brought out without excluding a systematic consideration of the subject. The articles on Physical Development, Prophylaxis, School Hygiene, Juvenile Crime, Headache, Hysteria and Insanity are peculiarly timely inasmuch as there have very recently been marked advances along these lines. The names of the contributors to this work insure its excellence and every topic is satisfactorily handled while some are presented in the most masterly manner. Ten hundred and fifty-two illustrations of a high grade of excellence add much value to the text. From a bookmaking point of view the volume is of the highest class and the wonder is that it could be produced for the low price at which it is furnished.

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News Items.

Dr. E. O. F. Roler has recently recovered from a severe illness.

Dr. C. D. Wescott has returned from his wedding tour, and now resides at 57 S. Elizabeth street.

Drs. H. J. and A. R. Reynolds are enjoying a vacation of several weeks in Cuba, Florida and other Gulf states.

Dr. Junius C. Hoag, Secretary of the Chicago Medical Society, left, February 24, for a five weeks visit to Mexico and the Pacific Slope.

Of the five bottles of Koch's lymph forwarded officially to the American government, one was sent by President Harrison to the Chicago Policlinic.

Dr. H. B. Stehman has been elected attending physician on the medical staff of the Presbyterian Hospital in place of Dr. Norman Bridge, resigned.

The Presbyterian Hospital is arranging to open a "Maternity" to have a capacity of twenty beds in a building separate from the present hospital buildings.

Drs. Shurly and Gibbs were in January the guests of the Chicago Post-Graduate School and gave an interesting exposition of their treatment of tuberculosis to a large audience at that institution.

The local profession sincerely regrets the removal of Dr. Norman Bridge, professor of Pathology in the Rush Medical College, to Los Angeles, and particularly that his health necessitated the change.

Judge Thayer, of Philadelphia, has given the opinion that no person can be legally compelled to leave his home and be treated in a hospital, even if he have smallpox or other contagious disease.—*Times and Register.*

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Dr. FRANKLIN H. MARTIN, of Chicago, was elected member of the Executive Council of the American Electro-Therapeutic Association organized at the Academy of Medicine in New York last January.

Dr. JAMES A. LYDSTON, professor of Chemistry in the Chicago College of Physicians and Surgeons, owing to ill-health in his family has removed to Denver, Colo., where he will resume the practice of his specialty as an oculist.

By decree dated December 4th Dr. GIULIO BIZZOZZERO, professor of General Pathology in the University of Turin, and Dr. OTTAVIO MORISANI, professor of Obstetrics in the University of Naples, were named senators of the kingdom of Italy.

Late numbers of the *New York Medical Record* have contained paragraphs reflecting very unfavorably on the Chicago Medical Society, based upon statements contained in two local monthly medical publications edited by honored members of the Society in question.

Dr. BENJAMIN LEE, secretary of the Pennsylvania State Board of Health, has reported to his board an estimate of the extraordinary losses of life by influenza during the recent epidemic. The number of cases in the state was probably not fewer than 1,120,000, and the number of deaths was 7,880, or at the rate of 1 death in every 142 cases.

Dr. WILLIAM C. HUNT, of 304 North State street, died at the St. Luke's Hospital February 28th, at the age of sixty-eight years. He was a graduate of Rush in 1852 and the first teacher of microscopy in that institution. In the early years of the Chicago Medical Society he was its efficient secretary, and has been in active practice until recently. Gall stones had troubled him for years, and with associated conditions finally led to his death.

The Cook County Commissioners have appropriated twenty thousand dollars for the erection of a Detention Hospital for the Insane, to be built on the grounds of the Cook County Hospital. The special committee of the Chicago Medical Society which reported on County Institutions at the January meeting were consulted in regard to the details of construction by the Board, and within a year a suitable building will be finished to meet the

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present need, and a disgrace of long standing will be ended by removing this department from the County Jail.

In a leader in the *Gazette-Herald* of January 19, M. Lereboullet calls attention to the warning issued by Prof. Grandeau, Director of the Eastern Agronomic Station, on the danger attending the importation into France of American meat, and with it, of actinomycosis. It is stated that the supervision exercised at Chicago is totally inadequate, as two inspectors are responsible for the examination of an average of 10,000 oxen and 20,000 pigs a day. As the Edmunds bill confers on the President plenary retaliatory powers on foreign nations whose traders export into the states articles intended for human consumption found to be adulterated, M. Lereboullet hopes that France will not, in her turn, be behindhand in instituting like measures to protect her citizens against the introduction of actinomycosis.—*Paris Correspondent Jour. Am. Med. Ass'n.*

Since January 26th, 1891, the following gentlemen have constituted the Medical and Surgical Staff of the Cook County Hospital:

Dr. Christian Fenger, Consulting Surgeon-in-Chief.

SURGEONS.

Dr. Leonard St. John,
Dr. Weller Van Hook,
Dr. C. F. Perkins,
Dr. Sven Johnson,
Dr. T. J. Conley,
Dr. J. B. Murphy,
Dr. E. W. Lee,
Dr. J. Frank,
Dr. A. J. Bouffler.

PHYSICIANS.

Dr. W. E. Quine,
Dr. Frank Billings,
Dr. Emil Sincere,
Dr. R. H. Babcock,
Dr. Edmond A Boas,
Dr. F. J. Patera,
Dr. J. B. Herrick,
Dr. C. C. P. Silva.

PHYSICIANS (continued.)

Dr. H. W. Ballard,
Dr. J. G. Berry,
Dr. C. A. Earle,

NEUROLOGISTS.

Dr. D. R. Brower,
Dr. Sanger Brown.

GYNECOLOGISTS.

Dr. Karl Sandberg,
Dr. Geo. Thilo,
Dr. J. R. MacNamara,
Dr. Sintzel.

OCULISTS.

Dr. Boerne Bettman,
Dr. C. D. Wescott.

DERTAMOLOGISTS.

Dr. Jos. Zeisler,
Dr. A. D. Finucane.

LARYNGOLOGIST.

Dr. Owsley.

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METEOROLOGICAL SUMMARY.

FOR FEBRUARY, 1891.

MEAN BAROMETER	30.034
Highest Barometer, February 28	30.548
Lowest Barometer, February 24	29.232
MEAN TEMPERATURE	28.6
Highest Temperature, February 24	58
Lowest Temperature, February 4	—8
Greatest daily range of Temperature, February 5	30
Least daily range of Temperature, February 7	4
Prevailing direction of wind	S. W.
Total movement of wind, miles	13,357
Extreme velocity of wind, direction, February 24	60; S.W.
TOTAL PRECIPITATION.....inches	1.95
Number of days on which .01 inch or more of precipitation fell	12
Number of cloudless days	10
Number of partly cloudy days	8
Number of cloudy days	10

H. C. FRANKENFIELD,
Sergeant U. S. Signal Corps, CHICAGO, ILL.

REPORT OF THE CHICAGO HEALTH OFFICE.

FOR FEBRUARY, 1891.

DEATHS.		DEATHS—CONTINUED.	
Measles	31	Bronchitis	94
Scarlet Fever	58	Capillary Bronchitis	58
Diphtheria	88	Pleurisy	3
Pertussis	24	Congestion of Lungs	17
Typhoid Fever	61	Phthisis Pulmonalis	173
Influenza	6	Violence	90
Pneumonia	233		

TOTAL DEATHS FROM ALL CAUSES..... 1,924

CASES REPORTED.

Diphtheria	186
Scarlet Fever	299

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CHICAGO MEDICAL SOCIETY.

FOUNDED 1852.

OFFICERS AND STANDING COMMITTEES, 1890-'91.

President, DR. FRANK BILLINGS.

First Vice-Pres't, DR. DAN'L R. BROWER.

Second Vice-Pres't, DR. FRANK E. WAXHAM.

Secretary, DR. JUNIUS C. HOAG.

Treasurer, DR. HAROLD N. MOYER.

Necrologist, DR. J. H. WILSON.

JUDICIARY COMMITTEE.

DRS. WILLIAM E. QUINE, J. H. ETHERIDGE, A. E. HOADLEY.

LIBRARY COMMITTEE.

DRS. D. W. GRAHAM, JOHN BARTLETT, BAYARD HOLMES.

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DRS. G. C. PAOLI, L. H. MONTGOMERY, A. R. REYNOLDS.

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RUSH MEDICAL COLLEGE,

Medical Department of Lake Forest University.

FACULTY.

DELASKIE MILLER, PH. D., M. D.,
Emeritus Professor of Obstetrics and Diseases of Children,
2011 Prairie Ave.

EDWARD L. HOLMES, A. M., M. D., Pres't.
Professor of Diseases of the Eye and Ear, 112 S. Clark Street.

HENRY M. LYMAN, A. M., M. D.,
Professor of Physiology and Diseases of the Nervous System.
533 W. Adams Street.

JAMES H. ETHERIDGE, A. M., M. D., Secretary,
Professor of Gynecology, Materia Medica and Medical Jurisprudence,
1634 Michigan Ave.

CHARLES T. PARKES, A. M., M. D.,
Professor of the Principles and Practice of Surgery and Clin. Surgery,
125 State Street.

WALTER S. HAINES, A. M., M. D.,
Professor of Chemistry, Pharmacy and Toxicology, Rush Med. College.

J. NEVINS HYDE, A. M., M. D.,
Professor of Skin and Venereal Diseases, 240 Wabash Ave.

NORMAN BRIDGE, A. M., M. D.,
Professor of Clinical Medicine and Physical Diagnosis, 550 W. Jackson St.

ARTHUR DEAN BEVAN, M. D.,
Professor of Anatomy. Rush Medical College.

J. SUYDAM KNOX, A. M., M. D.,
Professor of Obstetrics and Diseases of Children, 14 Loomis Street.

TRUMAN W. BROPHY, M. D., D. D. S.
Professor of Dental Pathology and Surgery, 96 State Street.

E. FLETCHER INGALS, A. M., M. D.,
Professor of Laryngology, 70 State Street.

DANIEL T. NELSON, A. M., M. D.,
Professor of Clinical Gynecology, 2400 Indiana Ave.

DANIEL R. BROWER, M. D.,
Professor of Mental Diseases, 70 State Street.

The Regular Annual Session of Lectures will begin the last of September yearly, and will continue six months.

The requirements for entering the College and for obtaining the degree are fully described in the annual announcement, which will be sent to any address upon application.

A spring course of lectures is also given. The Clinical and Hospital facilities for instruction are unusually large.

For further information address the Secretary,

Dr. J. H. ETHERIDGE,
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Professor of The Principles of Surgery and Surgical Pathology, Rush Medical College, Chicago.

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4. The mechanical irritation of peritoneal surfaces between which it is desired that adhesion should take place.

The value of all these methods has been experimentally proven, and they have been successfully applied by Senn and by other surgeons who have carefully reviewed his work. It is difficult to determine whether the enthusiasm and the confidence with which he writes should be praised or condemned. After completing his book, the surgeon lays it down with the conviction that at last the difficulties and dangers of abdominal work have been overcome, that the definite rules of operative procedure are established, that this branch of surgical knowledge is completed from Alpha to Omega. In the toil and travail of an obscure case there may be a tendency in the mind of the operator to resent this "cock-sure" style which filled his mind with such joyous anticipation, but when one or another of Senn's brilliant expedients has finally brought him to a successful termination, he may be disposed to look more forgivingly on this fault.

The greatest value of Senn's work is its suggestiveness. He has set surgeons in all countries to thinking and planning. His methods as such may none of them be permanent, but he has given an impetus to abdominal surgery the outcome of which none can foresee, but which is full of promise. He is in the very van of progress, a leader who is not infallible, but who has earned by hard work and ability the enviable place he holds in the scientific world.

The gaseous enemeta which he advocates as an infallible test in the diagnosis of wounds of the gastro-intestinal canal will probably not be found to sustain this claim, yet no one can deny the immense value of this method, nor withhold admiration for the genius which prompted its application. Finally, his book should be read to be duly appreciated, and no higher tribute can be paid to its value than that it stimulates the surgeon to better thought and better work.

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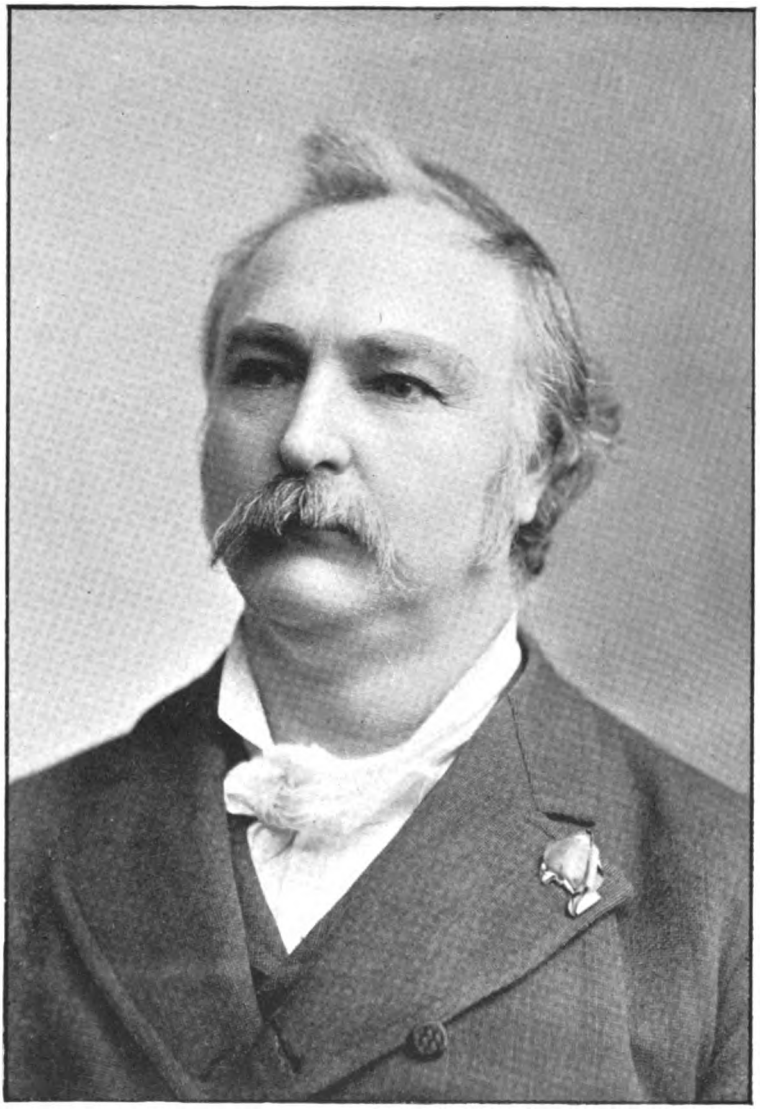

CHARLES T. PARKES, A. M., M. D.

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THE

CHICAGO MEDICAL RECORD.

Journal of the Chicago Medical Society.

DRS. JOHN A. ROBISON, WILLIAM T. THACKERAY, EDMUND J. DOERING,
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Original Articles.

ON THE TREATMENT OF CHRONIC SUPPURATION OF THE MIDDLE EAR.

BY DOCTOR H. GRADLE.

Read before the Chicago Medical Society, January 19, 1891.

In view of the frequency and danger of chronic suppuration of the middle ear, every practitioner ought to be familiar with its treatment. According to the experience of specialists such, however, is not the case. While every modern text-book on the ear gives the information how to treat this disease to him who seeks it, still not all the books lay down the general surgical principles underlying the treatment in a sufficiently impressive manner. On this account a discussion of the principles upon which the treatment should be based, does not seem to me a useless repetition.

Suppuration of the middle ear is the result of infection. This statement, suggested by our knowledge of suppuration in general,

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is based on the special investigation of the diseased middle ear by numerous observers.[1]

They all agree that in acute inflammation of the middle ear the most frequent micro-organism is the diplococcus, known as the cause of croupous pneumonia, either alone or in conjunction with other pus-producing microbes. In other instances one or the other or several of the varieties of micrococci which cause the more common forms of suppuration were found with or without the proteus bacillus; occasionally also the bacillus of blue pus. All these forms are known to possess pyogenic properties. Of the diplococcus of pneumonia it has been shown by Zanfal that when introduced into the middle ear of animals it can cause suppurative otitis.

In chronic suppuration of the middle ear (Kanthak) the diplococcus is no longer present. Indeed, we know that it can only lead a short life in the animal body. Its place has been taken by one or several of the other pyogenic micro-organisms.

Chronic suppuration of the middle ear is therefore very often a secondary infection, and quite commonly a mixed infection. Rohrer[2] claims that when the discharge is not fetid in odor only micrococci are present, while offensive odor indicates the work done by putrefactive bacilli.

The elimination of the pus-producing micro-organisms from the tissues is interfered with by stagnation of irritant pus. In general surgery it is a rule that suppuration ceases spontaneously where the pus can escape freely, at least where there is no complication with tuberculosis and where no mechanical disturbances interfering with the rest or nutrition of the parts exist. The irritation by foreign bodies prevents the arrest of suppuration only as far as they form a lodging place for germs. All this applies equally to the middle ear. We have here an irregularly-shaped cavity with various recesses. Amongst the latter the most important one is the attic of the tympanum, separated from the main cavity by the ligaments of the ossicles or by adventitious

[1] Zanfal, Netter. Weichsebaum and others quoted in Scheibe, Arch. of Otology, 1890, p. 168; Levy and Schræder, Arch. f. exp. Pathol. & Pharmacologie, B. 526, p. 223; Kanthak, Arch. of Otology, 1890, p. 25; Gradeingo, Centralbl. f. Bacteriologie, 1890.

[2] Morphologie d. Bakterien d. Ohres, etc., Zürich, 1889.

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membranes. In all these nooks and corners pus can stagnate. As long as such retention is not prevented, the lining membrane cannot rid itself of the micrococci which have invaded it.

In practice we do find that only a small proportion of the cases of acute suppuration of the middle ear heal spontaneously. The natural cure is most likely to occur in early childhood and in those instances where the nasal or pharyngeal disorder which led to the ear-disease was only transient. On the other hand, the more advanced the patient in age, the more permanent any co-existing naso-pharyngeal disease, and the more severe the infection, like scarlet fever, during the course of which the ear trouble occurred, the less favorable are the chances of a spontaneous cessation.

In order to aid the tissues in their elimination of the pus-micrococci, it is necessary, first, to remove all stagnating pus; second, to render the pus which continues to form unirritating; and third, to correct any condition that either keeps up the infection or interferes with the nutrition of the ear.

Pus cannot be removed from the meatus in any more efficient way than by means of a syringe. Wiping with cotton, the dry method in vogue some years ago, is painful unless very skillfully done and cannot clean out corners like a stream of water. The syringe should have a thin nozzle which can be deeply inserted into the meatus. Rubber bulb syringes or the tube of an irrigator can be more easily steadied than a piston syringe. Many of the so-called ear-syringes, especially those with an olive-shaped nozzle, are useless. Unless unavoidable, syringing should never be entrusted to the patient. With a fairly large opening, especially in the lower part of the drum-head, it is generally not necessary to syringe out the drum cavity itself by introducing any canula into it. Under such circumstances, a forcible current of air sent through the Eustachian tube with a Politzer bag and proper syringing of the meatus are usually sufficient to remove all retained pus. Whether this has been thoroughly accomplished can be most easily told in those cases in which the discharge is offensive in odor. If by the time of the second treatment the discharge has lost its odor, one purpose has been obtained. It can be set down as an absolute rule that no otorrhea ever heals as long as the pus retains any odor of decomposition. On the

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other hand, I have never met with a case of chronic suppuration of the middle ear with inodorous discharge which could not be controlled by persistent treatment, accompanied when required by attention to the nose and pharynx. When there is no odor present the only criterion of the efficacy of the treatment is the diminution of the discharge:

When the opening in the drum-head is so small or so high up that a current of water thrown into the meatus cannot remove all the retained pus, we can cleanse the middle ear either by irrigation through the Eustachian tube or through a canula inserted through the perforated membrane. It is not any more unpleasant to the patient to force warm saline solution through the Eustachian catheter than merely air, but it is more difficult. Besides, it cannot be done in every instance. Where there is suppuration of both ears, it is easier to irrigate at once through both tubes by means of the nasal douche employed like the Politzer method of inflation. Occasionally tubal irrigation shows its efficiency at once by washing out inspissated pus which previous syringing through the meatus had not been able to remove.

Often, however, we can reach pus-accumulations more thoroughly by means of a fine tube inserted through the perforated membrane. Indeed, when the opening is in Schrapnel's membrane this is the only efficient method. For in suppuration of the attic of the tympanum this space is commonly separated from the cavity of the tympanum by adhesions and false membranes and cannot be reached through the Eustachian tube. The silver tubes fitting hypodermic syringes are quite suitable for this purpose and the point can be slightly curved in order to reach in all directions. Sometimes it is necessary to enlarge the opening into the drum-head. The canula can be used with greater steadiness and efficiency if attached by means of a flexible hose to a syringe which the surgeon does not himself manipulate. Of course it is necessary to use the speculum and illumination with such a canula. If by any or all of these means the discharge cannot be freed of its odor, there exists either caries with inaccessible clefts where pus is retained, or the suppuration has involved the mastoid cells.

With thorough cleansing alone many cases of chronic suppu-

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ration of the middle ear, though not all, can heal. But we can hasten the cure decidedly by the judicious use of antiseptics. For the pus which continues to form after the syringing is still irritant. But by stopping further decomposition of this fresh pus until the next time of treatment we deprive it, to some extent, of its noxious properties. It is of doubtful advantage to use antiseptic solutions instead of pure water for syringing, for we cannot remove retained pus any better with the former than with the latter, and the continuance of suppuration is due to microbes in the tissues themselves which antiseptic syringing cannot reach. Where the discharge, however, is very offensive, it is more agreeable to the surgeon to use a deodorizer like the permanganate of potassium.

In order to accomplish anything with antiseptics they must be left in excess in the ear for the purpose of rendering the fresh pus bland. Aqueous or glycerine solutions are either inert for this purpose if weak, or unnecessarily irritating if concentrated. Peroxide of hydrogen is much used by some, but actual trial has convinced me that it is not superior to thorough irrigation. It aids only by decomposing with effervescence and thus reaching mechanically further than careless syringing. The best way of preventing decomposition of fresh pus is the use of an antiseptic in the form of a bland dry powder, especially the one first introduced by Bezold, of boracic acid. Comparative trial has shown me that this can be rendered even more efficient by adding *one-sixth of its weight of salicylic acid.* For although boracic acid is scarcely a germicide, it checks decomposition when present in sufficient quantity. Salicylic acid possesses this property even to a greater extent, but when used alone it is too irritating. I have experimented some with subnitrate of bismuth triturated with one-half per cent. of corrosive sublimate. This is perhaps equal to boracic acid, but not superior, except in those rare instances in which the insufflation of boracic acid is followed by a watery discharge lasting a few hours. Iodoform powder is absolutely useless for the present purpose, though it can be employed to protect denuded surfaces in caries, or after operations in the ear.

I have seen no reason to experiment to any extent with other substances in the treatment of chronic suppuration of the middle

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ear. For when we can remove all retained pus thoroughly and there are no complicating conditions, we can obtain a cure under the use of boracic and salicylic acids as rapidly as we can expect it in view of the morbid conditions existing. It is not rare to find the discharge practically stopped by a single treatment. Whenever a discharge free from odor is not at once influenced by the treatment, we must look for complicating conditions.

Lately there has been considerable protest from the school of Schwartze, especially by Staake,[3] against the use of insufflations of boracic acid. It is claimed that the powder by blocking small perforations may lead to retention of pus and even fatal consequences. Undoubtedly there is some ground for caution. Where the opening is small, we should assure ourselves, by looking through the speculum, that it is not obstructed by the powder. The meatus should never be packed and it is generally not advisable to give the powder to patients for their own use. However, in an experience of over one thousand cases I have never seen any untoward results from insufflation.

As the result of a fairly large experience, I have come to the following views as to the best management of those complicating conditions which interfere with the cure of suppuration of the middle ear. Polypi do not in all cases require surgical removal, although this, when thoroughly done, is usually the speediest way of dealing with them. But if they are not so located as to cause inevitable retention of pus and if not coexisting with caries, they will sometimes disappear by shrinkage as the ottorrhea heals under the routine treatment. More often, however, this is not the case. Yet it has seemed to me that polypi, unless very large in size, are of importance principally as an indication of caries rather than merely as a pathological entity.

If a carious spot is detected in the wall of the meatus or of the middle ear, all granulation-tissue should be curetted and any loose spicula of bone removed with forceps. If this procedure proves inefficient, the dissolution of the dead bone by hydrochloric acid, according to the suggestion of Ole Bull,[4] may prove of service. He inserts pledgets of cotton saturated with a four per cent. solution and leaves them in contact for twenty-four

[3] Deutsche Med. Wochenschrift, No. 50, 1887.

[4] Archives of Otology, 1889, p. 123.

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hours, to be repeated until the sequestrum can be detached. I have personally not had occasion since Bull's paper to remove any large spicula of bone, but for small carious spots which had interfered with the success of the ordinary treatment, I have employed the instillation of muriatic acid (five per cent. of the C. P. acid in water) with satisfactory results. I have left the fluid in the ear fifteen to thirty minutes, according to the tolerance of the patient, and repeated the application on successive days until I found the discharge diminishing. Caries may be present, however, without the dead bone being accessible to the probe. An ottorrhea which persists under the usual treatment, and is not kept up by nasal or pharyngeal tissue, always raises the suspicion of caries. In such cases the use of hydrochloric acid can corroborate the probable diagnosis by its curative influence. Whether caries of the ossicles can be treated successfully in this manner I am not prepared to state, since I do not know how to recognize this condition except by examination of the removed ossicles. When the carious ossicles are inaccessible by reason of adhesions around them, as in suppuration of the attic with small perforation in Shrapnel's membrane, a cure of the ottorrhea can only be expected from surgical interference, which should not be attempted by any but an expert.

Finally, I wish to emphasize the fact that there are instances of suppuration of the middle ear which either do not heal at all or relapse very soon on account of naso-pharyngeal anomalies. There are either an obstructing lesion in the form of an enlargement of the pharyngeal tonsil or thickening of the septum, or a persistent suppurative rhinitis. Whether there is in these cases a constant reinfection of the Eustachian tube or whether an injurious influence is exerted upon the nutrition of the middle ear, has not yet been decided. In these cases the success of the treatment of the ottorrhea depends upon the cure of the nasal or pharyngeal disease.

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MORVAN'S DISEASE; WITH THE CLINICAL REPORT OF A CASE.

By ARCHIBALD CHURCH, M.D.,
Professor of Neurology in the Chicago Policlinic, etc.

Read before the Chicago Medical Society, March 2, 1891.

The first description of the diseased state which by courtesy and convenience may be called "Morvan's disease," was made by Dr. Morvan, of Lannelis, in Brittany, and published in the *Gazette hebdomidaire de Médicine et de Chirurgie* in 1883, under the title of "Parésie Analgesique avec Panaris des Extremities Superieures." Since that date he has made numerous communications on the same subject in the same journal, with the reports of eighteen cases. In 1885 M. Broca (*Ann. de Dermet. et de Syphilog.*) published a case, and in 1887 M. Prouff (*Gazette Hebdom*), another Breton physician, recorded one, followed by Hanot in the same year. In 1888 d'Oger de Speville collated in a Paris thesis nine cases from various sources. In 1889 Heckel published a clinical observation (*Berlin Klin. Wochenschrift*). The same year (*Sem. Méd.*), Gombault reported the autopsy of Prouff's case before the Sociéte Medicale des Hôpitaux de Paris, and in 1890 Charcot (*Prog. Méd.*) published a clinical lecture on the subject, to which the writer is mainly indebted for the following description and for cuts 1 and 2.

A majority of the recorded cases have been among the Breton peasantry, but the condition was first observed in that locality, and possibly is as frequently found elsewhere, though not recognized under this name or as a disease of the central nervous apparatus. Morvan's attention was first attracted by finding a painless whitlow. In his first paper (1883) he says: "Twenty-five or thirty years ago a man of sixty presented himself, with a whitlow on one of his fingers. We made out a necrosed condition of the ungual phalanx and proposed to make an incision and extract the bone. As the patient gave his permission with reluctance, he was assured that the incision would be made like a

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flash, so that he would not have time to suffer. The cut, which was sufficiently free, was accordingly made, but what was our amazement to see the calmness of this man. Not a complaint! Had he been of wood it would have been quite the same. He affirmed that he had not suffered at all. * * * Taking a pin, we thrust it into various portions of the hand and forearm, which were swollen, without causing distress."

Originally Morvan stated the three characteristics of this condition to be, 1. Initial pains of a neuralgic sort in the extremities; 2. The appearance of paresis and analgesia, mainly in the hands; 3. The appearance of successive painless and destructive whitlows. Subsequently he modified this dictum, as cases fell under observation in which sensation was not materially changed, or in which paresis was absent, so that the only characteristic to be insisted upon is destructive and numerous whitlows.

The disease has numbered more men than women, but the few cases recorded do not justify generalization in this and many other particulars. Instances have been noted at all periods of life from twelve to sixty years, and for the most part occur in individuals exposed by out-door avocations. As it is the lower portion of the cervical enlargement that is primarily and mainly affected, the exposure of the neck by these people to the inclemencies of the seasons may be worth noting, *en passant*, as a predisposing factor.

The tangible clinical points of any one case are rather meagre, and, owing to the essentially chronic and progressive course of the malady, the early phases are often left in doubt through the forgetfulness of the patient. Frequently there is a history of neuralgic pains of long duration in the extremities afterwards affected, and this is followed by weakness. Sooner or later a felon makes its appearance and, depending upon the condition present as to analgesia, is painful or absolutely free from discomfort, though the swelling, redness and ulceration may attain a destructive grade. Indeed, the tendency of these inflammatory disturbances is to produce more than an ordinary amount of destruction and mutilation. There is usually exfoliation of a part or the whole of the terminal phalangeal bone, and the upper ranks are not infrequently lost. The nail matrix is also affected, resulting in dwarfed, claw-like nails, or only slight horny

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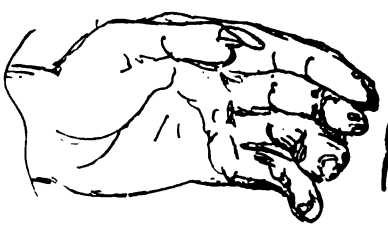
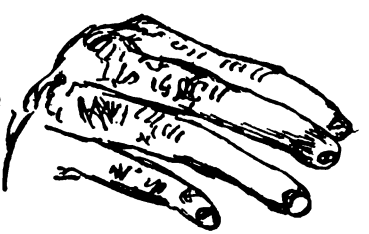
protuberances may be left. When the analgesia is pronounced, an apparently exquisitely tender felon may give no pain upon manipulation, and, as we have seen, not even resent the knife. In this condition the patients have frequently themselves picked out the bony fragments, the slight discomfort not leading them to seek surgical aid. Such fingers present a characteristic appearance. They are short and thick, and if the middle phalanx, or more emphatically if all the phalanges are lost, the presence of the stunted nail at the end of the stump is sufficiently noticeable. It appears as if the finger had been telescoped. (Cuts 1 and 4.) In some cases other evidences of dystrophy are present. The flexures of the fingers and the palmar folds are liable to cracks and fissures which are difficult to heal, and may present thickened epidermic margins about an indolent ulcerated center, comparable to perforating ulcers of the feet due to nerve injury, and not rarely found in tabes dorsalis. While the first felon may be painful, and marked by all the misery that usually attends them, succeeding ones are not, and, as a rule, both hands are eventually invaded. In one of Morvan's cases the lower extremity was finally implicated. Cases present from two to ten successive whitlows, and every digit may be mutilated by them. The tendency is to their symmetrical distribution. The hands become cold, dry, and subnormal in temperature, or may be the seat of profuse sudation and chronic swelling. Broca called attention to the fact, confirmed by Morvan, that the spinal column in over one-half the cases showed by distortions the tendency to



No. 1.—Hand in Morvan's disease. Hanot's case. After Charcot.



No. 2.—Hand in Scleroderma. After Charcot.

dystrophy in osseous structure. The scoliosis or kyphosis, however, is usually slight in degree, and not accountable for any injury to the spinal cord. Indeed, it is a result of the impli-

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cations of the cord and another evidence of the impairment of the cord's trophic functions. As a rule, the convexity of the curvature is toward the hand first involved, which is generally the right in men, the left in women. The joints of the hands, wrists, elbows, and even the shoulders, are sometimes affected with a dry, painless arthritis, and a condition analogous to the joint lesions of locomotor ataxia is developed. (Cut No. 3.) In several instances a slightly subnormal temperature has been persistently recorded even during inflammatory features of the malady.

Aside from the analgesia already mentioned, and which seems primarily to affect the deeper structures, there are usually well-marked and various impairments of cutaneous sensation. Tactile, pressure and thermic sensations, severally or singly, may be diminished or obliterated, or intact. No mention is made of hyperæsthesia, but the persistence of tactile sense with the complete loss of thermic and painful impressions, is said to be rarely or never present. The extent of these perverted areas of sensation seldom passes above the upper extremities, though in some cases the body is invaded more or less widely. The forearms and hands often present considerable muscular atrophy, and to the electric current manifest changed reactions indicative of nerve degeneration. Superficial and deep reflexes are not noticeably changed, nor is coördination materially modified.

Gombault's autopsy of Prouff's case furnishes all that is known of the anatomy of the disease, with the exception of some minor observations made upon the amputated extremities of the fingers, which furnished evidence of peripheral neuritis. This, the only case completed by an autopsy, was a woman of fifty-six years, who from the age of twelve had suffered from a series of whitlows which had caused considerable mutilation, marked by trophic troubles of the skin and muscles with errors of sensibility, all located in the hands. The spinal cord and peripheral nerves of the upper extremities were particularly examined. He says: "The nerve lesions consisted in an exaggerated production of connective tissue, with degeneration and disappearance of a large number of the tubules. These lesions presented the sort of distribution attributed to ascending neuritis; that is to say, they were more marked at the periphery and gradually diminished

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as the body was approached. In the spinal cord the alterations were localized in the cervical region, and only implicated the posterior horns, the posterior columns, and a small portion of the central gray substance. All these parts were the seat of an abnormal and diffuse development of interstitial tissue with thickening of the arterial walls, and frequently with obliteration of the lumen of the vessels. Nowhere did this sclerosis assume the form of an isolated or separable tumor. Owing to the state in which I found the cord when I was enabled to examine it, I could not decide whether there existed accidental cavities in the middle of the central gray substance, analogous to those which characterize syringomyelia, or not. I am, however, rather inclined to admit the negative. Nor can I decide whether the cord change had been the cause, or only the result, of the lesions in the nerves. The single point to retain from this examination, it appears to me, is the co-existence of lesions pertaining both to the cord and to the peripheral nerves."

It was on the same occasion pointed out by Debove that these lesions bore a striking resemblance to those of tabes. Charcot agreed perfectly with Morvan that the trouble is primarily in the cord, and that the trophic and sensory disturbances and the peripheral neuritis are all secondary to the central change, while others find an explanation of the cord lesion in the extremities and the pathological conditions found there. It is needless to say that as yet, no microbe has been brought forward as an etiological factor, and the ultimate cause of the disease is wrapped in the same mystery which pertains to other sclerotic affections of the cord. Even syphilis has not been accused of the paternity of this malady.

The diagnosis of the disease in recent cases must often be difficult, but when the condition has been of long standing it is probable that ordinary attention and care, with a knowledge of its existence, will be quite sufficient for its recognition. A somewhat allied tropho-neurosis, localized and symmetrical sclerodema, may at first be confusing. When this condition is limited practically to the hands it gives rise to paresis, distortion and changes of a general nature in sensation, with atrophy, but there is no tendency to alteration, to the exfoliation of bone, and the peculiar analgesia above described as usual in Morvan's

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disease is wanting. The hand assumes a peculiar position with the digits extended, except at the metacarpo-phalangeal joints, which are flexed, and there is a tendency to over-extension in the middle joints of the fingers, particularly in the index. It is the arrangement produced by the action of the interosseous muscles, and is sometimes called the interosseous position. The skin is shiny, adherent to the bones, and the digits, atrophied *en masse*, behave like so many tapering rigid sticks. (Cut No. 2.) Associated with scleroderma is a peculiar mask-like expression of face, due to the implication of the facial integument and its adhesion to all bony prominences. This is so characteristic that, once recognized, it can scarcely be mistaken.

Another form of scleroderma, ainhum, occurring almost invariably in hot climates and in the dark-skinned races, may produce painless amputation of fingers and toes, but usually is limited to the feet, and it is the outer toe that is lost, as a rule. In this condition, the history of a slowly forming constriction by a cicatricial-like encircling band will prevent mistake.

In the anæsthetic forms of leprosy the nails, portions of the fingers or entire digits, may be lost without pain or local suffering. This insensibility is due to a peripheral neuritis set up by the bacillary infection upon which the disease depends. The condition is distinguished from Morvan's disease by the history of exposure to leprosy, and the disseminated leprous nodules and patches on the integument of the body. The process, moreover, is the reverse of the loss of a finger from whitlow. An abrasion of the skin becomes an ulcer, grows deeper and wider, encircles the finger or envelops it completely, and finally causes its destruction or leads to its amputation by the surgeon.

Symmetrical gangrene or Raynaud's disease, so rare a condition that Billroth, a few years back, had never seen a case in his unparalleled field of observation, though sometimes causing a loss of fingers, presents a totally different picture from Morvan's disease. The digits affected, upon exposure to cold or in the morning, or after emotional excitement, present a blanched, shriveled, purplish or mottled appearance, with sensations of tingling and numbness, a loss of power and considerable discomfort. This passes away in a short time or may persist for hours, to recur under similar circumstances for months or years. Subse-

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quently, in destructive cases, the circulation, which is said to be inhibited by vaso-motor spasm, does not become even temporarily restored, and dry gangrene results, causing mummification of the members and finally their loss. There is no whitlow, no peculiar dissociation of cutaneous sensations, and no evidence of organic cord disturbance before or after death.

Some writers and observers, with Debove in the lead, assert that Morvan's disease is identical with syringomyelia, but this is most vigorously denied by Morvan himself, and he is supported by Charcot, Hanot and others. Nevertheless, there are many striking clinical resemblances. The asserted pathognomonic indication of syringomyelia is loss of painful sensations and inability to distinguish the temperature of any object brought into contact with the affected areas, while the sense of touch and tactile impressions remain essentially unimpaired. It is often associated with atrophy and paresis depending upon the distribution of the gliomatous infiltration about the central canal of the cord, which forms the anatomical basis of the condition and gives rise to the cavities within the cord and the dilatation of its central canal upon which the somewhat unwieldy name depends. Morvan insists that this particular dissociation of the cutaneous sensations is never found in the malady bearing his name, and the single post-mortem observation already quoted does not correspond with the findings in cases of syringomyelia now on record. However, both Morvan's disease and syringomyelia number but few published complete instances, and it may be premature to insist upon their absolute differentiation. To an unprejudiced mind the prime point of importance is the fact that they both depend upon an irregularly distributed sclerosed condition of the cord. The variations outside of that seem to be a matter dependent only upon the position of this adventitious and unsystematized lesion as it affects nutrition, sensation and other myelic functions in proportion to their anatomical implication. Besides, all gradations between typical syringomyelia and typical Morvan's disease have been encountered. Both are instructive in demonstrating the location of sensory tracts in the cross section of the cord. The clinical and anatomical features of resemblance between tabes dorsalis and Morvan's disease have been already pointed out.

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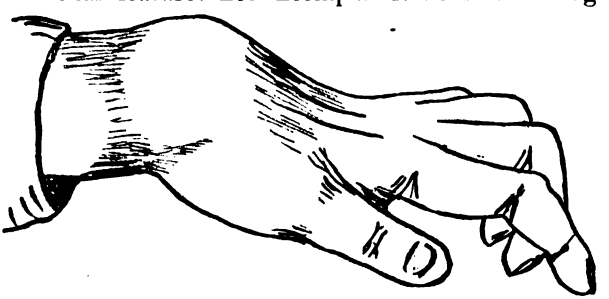
The course of the malady, as already often indicated, is extremely chronic, and as far as now known, practically beyond the influence of therapeutical intervention. In any given case it is to be expected that whitlows will occur from time to time, and of course resulting mutilations are irreparable. In some instances, from this source, septicæmia has resulted and terminated life. Such measures as are directed against a low grade of inflammation in the cord are to be tried and persevered with, and of course the general health is to be maintained. It would seem especially advisable that the hands receive scrupulous care and protection, as any traumatism or superficial abrasion may cause serious results or even lead to the loss of a finger.

The following case was brought to the writer's attention by Drs. Patrick and Harris, of this city, and of the Policlinic staff, in November, 1889, for an opinion regarding the nature of the joint disease in the left wrist (Cut 3), its similarity to the joint lesions of locomotor ataxia having given rise to discussion. At that time undue weight was attached to the scoliosis, which is marked (Cut 5), and implication of the cord or nerve roots was suspected. Further consideration of the case enables one to classify it with those recorded under the title of "Morvan's disease," every important symptom of which it presents, besides some additional features not incompatible with such diagnosis.



No. 3—From a photograph. Hand in Morvan's disease, showing joint lesion.

Since that date the man has been casually seen at intervals, and nothing new has developed. Recently (January, 1891) a careful and thorough examination has been made and photographs obtained, from which cuts 3, 4 and 5 are reproduced.

Case.—A. N. is an unmarried Swede of thirty-five years, who

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has been in this country since 1886. He now makes a fair living by taking orders about the city for a tobacco firm, in which occupation he does much walking, and is in the enjoyment of excellent physical health, confirmed by his general appearance. His family history presents, as far as he is informed, absolutely nothing in the way of a neurotic trace, and his parents both attained a very advanced age. As a child, youth and young man he was always in good health, growing up in the country. He was engaged in farming until he came to America. Owing to the poverty of the family and the barrenness of the land, his life was one of extreme labor and hardship. His habits have been exceptionally good in all respects, and there is neither history nor trace of any venereal infection. He states that some ten years ago his back became crooked. Previous to that time he asserts that he was as straight as any one. About the same period he had a felon on the right ring finger, near the extremity on the palmar surface, which was excessively painful, kept him awake nights, was marked by high inflammation, great swelling, deep-seated suppuration, and which has left the finger stunted, with a deformed nail and shortened distal phalanx as shown in Cut 4. Six years ago, after a bath in a lake on a cold day, he drove several miles in a cold wind, and in a day or two the left hand, wrist and arm became greatly swollen and very painful. He was sick, confined to his bed for a month, and remembers having severe chills and a high fever. The swelling in his wrist, where the main difficulty was located, never entirely subsided, and now presents the contour and deformity shown in Cut 3. There is no pain, heat, redness or tenderness about the greatly enlarged joint, though the carpus seems entirely disintegrated. Upon passive motion, which is but slight, there is roughness, grating and creaking in this articulation. The thumb is shortened as is the entire hand, and seems to articulate directly with the radius. Its extremity does not reach the first phalangeal joint of the index, as it should normally, by nearly an inch. There is a subluxation of the entire metacarpus forward, and spastic flexion of the fingers, which cannot be straightened voluntarily, and passively only by the employment of considerable force. The whole hand is diminished in thickness and width, and the fingers present a delicate appearance out of keeping with the rest

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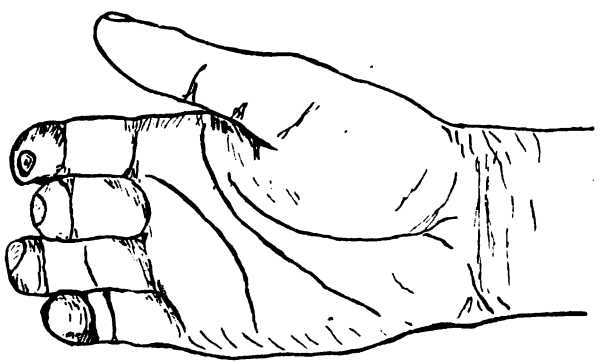
of the extremity, which is rather muscular. The integument is somewhat smoother than usual, but these points may be due to the comparative disuse of the hand for heavy work. The extensor tendons of the fingers are salient on the back of the hand, and the intrinsic muscles seem wasted. Over the thumb he has good control, and the thenar eminence is full and round. Although the grasp of the hand is very much reduced, it is a useful member, capable of many complicated and fine maneuvres.

Three years ago he lost the end of the right index by what he describes as exactly the same process which ten years ago attacked and mutilated the right ring finger, with the very extraordinary exception that it was absolutely painless and not even marked by tenderness. He states that the finger was enormously swollen, very red and angry looking, finally discharging pus, and that he himself picked out of it several fragments of bone. As shown in Cut 4, it now presents but a small portion of the middle phalanx, the distal bone being completely absent, and the greatly deformed, horny, nipple-shaped nail is seated upon the end of the stump. The scar marking the opening through which the bones escaped is on the anterior surface, running to and involving the nail matrix.



No. 4.—From a photograph. Hand in Morvan's disease showing mutilation from whitlows.

Within that same year the middle finger of the right hand went through exactly the same programme and exhibits practically the same mutilation, though even more shortening is present. In both these fingers the joint between the first phalanges and the

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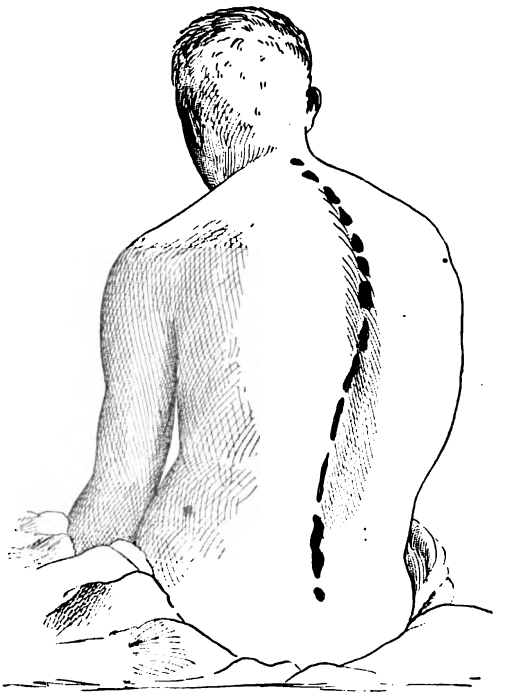
fragments of the second is preserved. The hands show no other trophic disturbances. The skin is elastic, soft, properly moist and of a good color, indicating no material change in the circulation of the parts, nor are they unpleasantly affected by cold weather.

Upon testing the sensibility of the hands it is found that on all parts the lightest touch with a flake of cotton wool is instantly perceived and accurately located. Indeed, he responds to this delicate test better than some individuals in a presumably normal state of health. The prick of a pin is equally well felt, but not



No. 5.—From a photograph. Showing scoliosis in Morvan's disease.

as a painful sensation. He cannot detect the difference between a pin point and a blunt pencil, and this too when the pin is thrust sufficiently into the skin to remain standing there. When tested with similarly shaped hot and cold objects it is only with difficulty that he can properly make out their respective tempera-

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tures, and slight variations escape him entirely. These peculiar conditions are present in all portions of both hands and gradually fade out upwards toward the elbows. There is no retardation whatever in the transmission of tactile impressions, and no subjective unnatural sensations. Palpation does not detect any tenderness over the nerves or thickening of their trunks. Coördination in the upper extremities, as tested by having the patient make exact movements of wide range while his eyes are closed, is quite normal, and electrical tests present no departure from the formula of health, even in the left hand. The muscular sense seems normal.

His gait is somewhat shambling and difficult to describe, being more of a peculiarity than anything else. There is no limp or dragging of the feet, and he walks in a straight line with great precision and firmness with his eyes closed. His body is plump, smooth and free from blemish of any sort, but the spinal column shows a compound curvature. The convexity, beginning in the upper dorsal vertebrae, is backwards and to the right, embracing most of the dorsal region, with a compensatory curve in the opposite direction in the lower dorsal and the lumbar spine. These curves are practically very pronounced exaggerations of the normal lateral deflections, and certainly not sufficient in themselves to implicate the cord, the lesion of which, indeed, cannot be below the first dorsal segment. They may explain the peculiar walk. There is no tenderness anywhere along the spine or any marked prominence of the spinous processes, and the column is ordinarily flexible throughout. In taking the photograph from which Cut 5 is made, the outline of these processes was indicated by roughly marking them on the patient's back with iodine.

An examination of deep and superficial reflexes detects nothing abnormal, though the knee jerk is somewhat pronounced. There has never been any loss of control over the bladder and rectum, or difficulty of any sort with these organs. There is likewise nothing in the history suggestive of the lightning pains and crises of locomotor ataxia, nor girdle pains, nor hyperæsthesia of any character. The special senses and their respective organs are quite normal, the mind unaffected.

In summing up the case the analgesia in the hands, the

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dystrophy of the wrist-joint, the loss of fingers by whitlows, all point to the diagnosis of Morvan's disease and furnish its most salient characters. The retention of the tactile sense with the marked blunting of painful and thermic impressions, *per contra*, constitute the so-called pathognomonic indication of syringomyelia. This therefore is probably a mixed case. Such a number of speculations as to the exact location of the lesion in the cross section of the cord present themselves, that their discussion is idle. This much seems certain, the anterior horns and the pyramidal tracts are not implicated. The solution must be left to a post-mortem examination which, fortunately for the patient, appears to be a distant contingency.

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[*For Discussion see Society Proceedings.*]

NOTE.—Since writing the above the author's attention has been called to an autopsy by Joffroy (*Sem. Med.* March 4, '91), made on a typical case of Morvan's disease, and discovering the dilatations of the central canal with gliomatous enlargements in the gray matter that characterize syringomyelia.

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THE SHURLY-GIBBES TREATMENT OF TUBERCULOSIS.

By E. FLETCHER INGALS, A.M., M.D.,

Professor of Laryngology, Rush Medical College; Professor of Diseases of Chest and Throat, Woman's Medical College;

AND

JOHN EDWIN RHODES, A.M., M.D.,

Professor of Diseases of Chest and Throat-Clinical, Woman's Medical College.

The treatment for pulmonary tuberculosis, proposed by Drs. Shurly and Gibbes, consists of hypodermic injections of solutions of the chloride of gold and soda, or of iodine, and inhalations of chlorine gas. The injections should be made with an absolutely clean syringe which should always be washed with pure alcohol before and after using. The treatment should be commenced with small doses which may be gradually increased until some constitutional effects are observed or until the largest dose recommended is reached. It is usually best, excepting in advanced cases, to begin with the iodine (though it is apt to cause considerable smarting), and it should be continued ten to fourteen days and then it may be given alternately with the chloride of gold and soda solution, and later on (after four or five weeks) the chloride of gold and soda solution may be used alone, if everything is going well. In some patients the chloride of gold and soda answers best. However, I think most benefit will be derived from the iodine solution.

The dose of iodine is from one-twentieth to one-sixth of a grain, and of the chloride of gold and soda, from one-twenty-fourth to one-eighth of a grain. The minimum dose should be used at first and it should be increased by about twenty per cent. each day until the largest dose is obtained unless constitutional symptoms occur. When iodine is used it is to be increased as just directed unless symptoms of iodism appear or unless there is some loss of appetite, disturbance of the bowels or complaint of unusual fatigue. If any of these symptoms occur the iodine may be substituted by the chloride of gold and soda for a day or two

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and then given again in diminished doses, which may subsequently be gradually increased. Sometimes while patients are receiving the chloride of gold and soda, in large doses, pains are experienced in the bowels, or in some instances there are uncomfortable sensations in the head; occasionally, also, profuse sweating has been noticed. If any of these symptoms develop the dose should be at once diminished, or the remedy substituted by the iodine. I have recently been using a solution of iodine in oil which was prepared for me by Dr. Clark. It causes very much less smarting than the solution in water, but after ten to fourteen days I have observed that the solution changes so that it must be well shaken before using.

The most favorable place for the injection is on the loose skin, in the gluteal region, and care should be taken that it is thrown simply into the cellular tissue beneath the skin, and not into the muscles, which would cause unnecessary pain. I have found that rubbing the part for two or three minutes after the injection will sometimes greatly relieve what pain it may cause. In ladies where it is difficult to get at the point mentioned, on account of the clothing, I usually make the injections in the back just below the inferior angle of the scapula or between this and the spinal column.

Injections are advised, daily for about two weeks, every second day for the two following weeks, and subsequently once in three, four, five, six or seven days, gradually diminishing the frequency according to the result. When these remedies are acting well the appetite and strength gradually improve, the weight increases and the cough and expectoration gradually diminish. For the first two weeks, Dr. Shurly states, the temperature is apt to be increased, but subsequently, in favorable cases, it decreases until the normal limit is reached. I have frequently found the temperature subnormal in the forenoon, particularly if the patient had been out in the cold.

The iodine seems to act best, but after using it for a time the chloride of gold and soda appears to maintain (at least for some time) the effects produced by the iodine. Where I have used the chloride of gold and soda alone (as has been recommended in advanced stages of phthisis) I have not as a rule obtained as

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favorable results as where I have first used the iodine, but occasionally it acts well from the first.

It is very important that the solutions be chemically pure; these solutions I obtain from Dr. J. E. Clark, of the Detroit Medical College, but they may be prepared by any skillful chemist who will consult Dr. Clark's recently published description of their preparation.

The chlorine inhalations may be given either by means of some of the common or specially devised inhalers, or in a room filled with chlorine gas. The latter is applicable to hospitals where small rooms can be arranged; or even to small bedrooms, where it is readily carried out in the following manner:

First, a steam atomizer is made to throw into the atmosphere of the room a solution of chloride of sodium of about fifteen grains to the ounce; this is continued until the atmosphere of the room is so permeated by the spray that a person on the opposite side can taste the salt. One or two teaspoonfuls of chlorinated lime is then placed upon a plate or saucer and wet with a mixture of hydrochloric acid one part and water two parts, which causes the rapid liberation of chlorine gas. This is then held directly under the spray of the chloride of sodium solution and the gas is carried by it into the atmosphere of the room, where the patient sits for ten or fifteen minutes—as long as he can well tolerate the inhalation.

For office use and other places where a room cannot be appropriated for the inhalation, some of the atomizers already in use for giving deeper inhalations, might be employed; but Dr. Shurly uses a glass flask such as is ordinarily used for table water and capable of holding two or three quarts, or in lieu of this a large bottle may be employed for the purpose. This has a hole about an inch in diameter drilled into one side and has fitted upon the mouth a rubber cap such as is used by dentists for their nitrous oxide inhalers. It is placed upon a suitable stand and then a mixture of chlorine water with a solution of chloride of sodium, ten to fifteen grains to the ounce, is thrown by any suitable atomizer, through the opening in the side against the opposite wall of the flask, which breaks it into a fine vapor; the patient at the same time inhales and the air which is drawn in through the opening in the side of the flask takes up a

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sufficient quantity of the vapor and chlorine gas. I use the Davidson No. 66 atomizer with from thirty to forty pound air pressure. Physicians who have not a compressed air apparatus may obtain a simple and effective instrument of Sharp & Smith which will answer the purpose well. Some patients do not bear the chlorine well; for these I use, in the same way, a spray of iodine made with four minims of the compound solution of iodine and one drachm of glycerine to the ounce of water. Its effects seem almost, if not quite as good as those of the chlorine. Occasionally patients who are using the chlorine inhalations regularly will experience at some time without apparent cause an alarming sensation of constriction of the chest sometime after the inhalation has been taken.

It is very difficult to obtain a uniform strength of chlorine water, on account of the various methods employed in its manufacture, and because the gas rapidly escapes when the bottle is uncorked; therefore, a solution which may be strong one day may be comparatively weak the next and by the following day may have little effect. I have tried various methods to overcome this objection. First, I placed a definite amount (three or five grains) of chlorinated lime in the flask and added to two ounces of the chloride of sodium solution a half drachm of dilute hydrochloric acid. In this way as the acidulated spray was thrown against the opposite side of the flask it ran down upon the chlorinated lime and liberated the chlorine gas; but I found that at first it was liberated too rapidly if five grains of the chlorinated lime was used, while at the latter part of the inhalation little or no gas would be evolved. Hoping to have the gas liberated more uniformly, I had the chlorinated lime made into compressed tablets, but with these I succeeded no better; for from them very little gas was evolved, and even on breaking up the tablet the amount was not much increased, which seemed to indicate that it had disappeared in consequence of the pressure, or from other causes. I then tried the euchlorine gas, which Prof. Haines suggested to me has greater germicidal properties than chlorine, and is less irritating. This we easily prepared by treating pulverized chlorate of potash with chemically pure hydrochloric acid, but in spite of all precautions we obtained with it a large amount of hydrochloric acid fumes, which were

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extremely irritating. To neutralize these I introduced into this solution prepared chalk, but I found that the carbonic acid liberated in this way carried off with it a large portion of the euchlorine gas, so that the liquid remaining possessed only feeble germicidal properties, therefore it was not suited to the purpose. More recently I have used the U.S.P. chlorine water prepared by Hance Bros. & White of Philadelphia, of which from one-half to one drachm to the two ounces of the chloride of sodium solution will make as strong a chlorine gas as can be tolerated by the patient. To avoid the deterioration in strength caused by frequently opening the bottle I adopted a suggestion given me by Dr. Bridge and had several small glass-stoppered bottles filled from the large one, and used from them. In this way it is not necessary to open the large bottle more than two or three times, and a nearly uniform strength of the chlorine gas can be obtained.

I have now been using the Shurly-Gibbes method about eight weeks and have treated by it between forty and fifty patients, but in a disease like consumption this length of time is not sufficient to enable us to draw accurate conclusions as to its effect. Dr. Shurly wrote me in the beginning "that the results were certainly encouraging," and I can from my experience heartily corroborate this statement, yet I cannot say exactly how much good has been done. In most cases which had reached the third stage of the disease with cavities in one lung and the other lung more or less involved, I cannot see that any appreciable good has been done; yet in one of these there has been very marked improvement, the patient has gained strength and weight, has much less cough and fever and as a whole appears very greatly improved, but of the others two have died and with several the treatment has been discontinued because it appeared to be doing no good. With some patients in the second stage of the disease with a whole lobe or even a whole lung involved, we at first appeared to be deriving benefit, but subsequently concluded that the treatment was useless; while in others of this class very decided improvement has occurred. In the first stage of the disease where not more than a third of the upper lobe of one lung has been involved the patients as a rule have been so greatly improved that I expect ere long to say of many of them

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that "they have been cured." Three are now apparently well and several others rapidly convalescing.

This treatment is based upon careful experimentation, it is scientific, thoroughly professional and seems to be beneficial; therefore, I hope that the profession will give it a careful trial even to the minutest detail, for it must be remembered that experiments often fail by neglect of some of the details, which to certain observers seem unnecessary. I would not, however, advise the use of this treatment to the exclusion of other remedies which physicians have found of benefit in certain cases, for we cannot experiment upon our patients. I recommend this treatment to patients simply as an additional chance. Many failures will undoubtedly be experienced and recorded; those who use the method in a slipshod way will surely obtain unsatisfactory results, and even though it be employed in the most skillful manner, with the judicious administration of other remedies, there will necessarily be many patients who cannot be cured by it. However, if properly carried out I feel confident that much good will come of it and no harm can result.

Even if only a few patients are cured Drs. Shurly and Gibbes will receive the commendation of the profession and will be entitled to the gratitude of the public for their painstaking and laborious efforts to find some way of curing this dread disease. We congratulate these gentlemen upon having given us, what at present indications is one of the most promising methods of treatment yet discovered for pulmonary tuberculosis; but their work is not yet completed and they and others must work on until instead of twenty-five or thirty per cent. from eighty-five to ninety per cent. of these cases may be prevented or cured.

As supplementary to this paper Dr. Rhodes will read the reports of a number of cases treated by this method during the past eight weeks.

REPORTS OF CASES TREATED BY THE SHURLY-GIBBES METHOD, BY JOHN EDWIN RHODES, M.D.—I wish very briefly to speak of the effects in five or six of the cases treated by this method (now over forty in number).

Mr. M., twenty-four years old, had a catarrhal pneumonia early in January, 1890, but health was fair till September,

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when he caught a severe cold, followed by cough, some dyspnœa, loss of weight about seventeen pounds, loss of strength, and considerable pain at lower part of chest on both sides. An examination showed no abnormal signs save heightened pitch, slightly harsh respiration and exaggerated vocal resonance over right apex, early in November. He continued in this condition, being under treatment during November and December with little change. January 13th his pulse was 124, temperature 100⅜°, with distinct harsh respiration above right clavicle, with slight dullness and some feebleness of respiration over lower part of same lung. He was pale, weak, had pains in the chest and felt miserably. An injection of ℥viii. iodine solution was used, and remedies similar to those he had been taking were continued. Two days later the cough was much looser and the pain was less. He said he could taste the iodine for a day after it was injected. Pulse 104, temperature 100⅕°. January 26th, said he had lost six pounds in two weeks. Moist bronchial rales over both sides of chest. The injections were continued about every two days. Soon the cough became softer. The appetite continued fair. On February 2d said he felt better than for a month—gained one pound the previous week; less cough and much softer; was sleeping well. On February 18th said he had an elegant appetite, less soreness and feeling much better in every way. Very little cough, only slight in the morning. This patient continued his work during the treatment. He now considers himself well. His chest signs are decidedly better, and the improvement in all symptoms is certainly marked.

N. C. E., aged twenty-seven, came to the office on December 23d last, complaining of a bad cough, much worse in the morning; grayish white expectoration, about ʒii. every twenty-four hours; some dyspnœa on exertion, fair appetite and digestion, no loss of weight, or much loss in strength. Pulse 102, temperature 100°. Signs: Some dullness over inner half of right infra-clavicular region, with prolonged expiration and exaggerated whisper resonance. No rales. There was some slight loss of motion—no other signs. Diagnosis: Slight consolidation of right apex. Placed under appropriate remedies till January 3d, when he was given his first injection ℥x. of the iodine solution, and on the 7th reported that he was gaining nicely. After the second

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injection said that the cough was much better, and had almost ceased. On 29th, after having the injections every three or four days, his temperature was 98°, and had gained two and one-half pounds. He has continued as well since that time, save for a day or two after having taken a slight cold.

C. K., on presenting himself in January, complained of having had a cough for a long time, with greenish yellow sputum, some dyspnœa for three weeks, chilliness and fever every day, and had lately begun to feel weak and run down. Pulse 130, temperature 101°. He showed marked dullness and broncho-vesicular respiration as low as the third rib on the right side, with feeble respiration below this as low as the seventh rib, and at the base of the lung subcrepitant rales were present, with a few friction sounds—thus showing an involvement of the whole lung. ℥viii. of the iodine solution were injected daily, increasing the dose gradually to ℥xx., soon alternating with the chloride of gold solution. He had also the daily inhalations of chlorine. An obstinate diarrhea appeared about a week after he began the treatment and it was not fully controlled for two weeks. On account of this diarrhea we reduced the dose to about ten to twelve minims. He continued his work, however, and soon began to improve. Four weeks after the treatment was commenced he felt very well, the diarrhea had ceased, cough was diminishing, appetite was good and strength fair. Temperature 98⅘°, pulse 106. He is still under the treatment, taking the inhalations daily, and the injections every second day. The signs have not changed to any great extent.

Mrs. D. A. C., aged twenty-nine, in December last gave the following history: For two or three years had tickling sensations in throat, with slight cough; was quite weak, but appetite had been fairly good; some loss in weight; a little fever most of the time. Of late had considerable dyspnœa. These symptoms had come on gradually, but about three years ago had a severe attack like pleurisy in upper part of left lung. Mother died of consumption. Expectoration heavy, yellowish. Tongue coated white. Menses very irregular for three years. Pulse 128, temperature 100⅕°. An examination revealed a large cavity in upper lobe of left lung, with decided dullness as low as the seventh rib, with subcrepitant rales in lower part of the lung. Right apex also

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involved as low as the second interspace. We began with the injections, using ♏x. iodine at first, gradually increasing the dose day by day, at the same time using daily inhalations of chlorine, and appropriate internal treatment. Her general condition two weeks after the treatment began is noted as being better in all respects save the shortness of breath, with some tightness of the chest, which were probably due to the contraction of the lung noted in some cases by Dr. Shurly. At present she is having an injection of iodine or chloride of gold and sodium alternately every second day. At the time of the last treatment her pulse was 120 and temperature normal. Has had some diarrhea, but was improving in this respect. On the whole I think we may safely say that if we take into consideration the extent of the involvement of the lung, and her general condition, she has done better than we should expect her to do under constitutional treatment alone.

Another case that might properly be suspected as phthisical, but in whom there were no positive physical signs, is of interest owing to the alleviation afforded in one symptom—a distressing, constant, severe cough. He had suffered from it for seven months and many remedies local and constitutional were tried with but little effect. Had lost twenty-five pounds, strength poor, appetite fair. Pulse 126, temperature 101°. The cough was peculiar; sometimes having none for an hour or two; then there might be a paroxysm of four or five hours' duration. The expectoration was small in amount. There were no distinct signs. Occasionally a few subcrepitant rales at apices of both lungs. Began injections of iodine December 24th. No perceptible effect on the cough at first. On January 7th had temperature of 98⅘°, pulse 108, and said he felt as well as he ever did, but was still coughing a good deal. Improved gradually after that, ceased taking medicine, the cough almost disappeared, and his pulse and temperature were about normal.

70 State Street, Chicago.

[*For Discussion see Society Proceedings.*]

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A FEW OBSERVATIONS ON "KOCHINE."

By F. W. SCHMIDT, M.D., Vienna, Austria.

Read before the Chicago Medical Society, March 16, 1891.

Although a great deal has been written pro and con on this subject, I will attempt to bring a few facts to your attention, as they appear to an impartial American student.

The number and variety of the cases treated were the strongest motives which prompted me to present the following observations: The cases under consideration were treated at the Dermatological Clinic of Prof. Kaposi at the Vienna General Hospital. Owing to the difficulties which were encountered in attempting to obtain data, I am enabled to give but a very brief and miscellaneous report. Operations were begun on the morning of November 29th, 1890, and treatment continued at intervals of three or four days until January 10th, 1891. A ten per cent. solution of the *lymph* was made in a one-half per cent. solution of carbolic acid. The twenty-one patients who were treated at this time received doses varying from three to seven millegrammes. The site of the injection was either on the right or left of the spine, at the level of the lower angle of the scapula. The ages of the patients ranged from fifteen to fifty-six years, and the majority were women. Most of them were lupus cases, in whom the seat of the disease was either about the face and neck, or arms and hands. In several cases there was also lupus of the lower extremities. So far about forty-six cases have been treated at this clinic, namely: thirty-five of lupus vulgaris, four of lepra, three of papular syphilide, and one each of tuberculosis verrucosa cutis, epithelioma of the forehead, sarcoma of the pharynx and lupus erythematodes. Reaction, when it did occur, came on in from four to eight hours after the injection. The first symptoms that were noticed were chills, difficulty in breathing, pain in the joints and back, and dizziness. Subsequently there was fear, retching and vomiting, looseness of the bowels, and the tongue became covered with a thick coating.

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The highest temperature observed was 41.2° C., and in some cases the number of respirations reached forty.

The maximum pulse-rate was 160, but in the average cases it was but 130. The lupus tissues became inflamed and œdematous, there was an exudation of serum, and the patients presented all the features of a toxic erythema, which in a number of cases became general. Later on there was delirium, and in one case of lupus, collapse followed an œdema of the lungs. Cough and headache were noticed in the majority of cases, and the reflexes were greatly increased. The lupus nodules became very prominent and hard. After a day or two the serous effusion was dried up, and the skin over the diseased tissues became scaly, and upon removing this, an ulcerated surface was found underneath. In a few cases of lupus there was enlargement of the spleen, and in others peptonuria and hæmaturia; but these symptoms were noticed in *only* a *few* cases. The lepra and the lupus erythematodes cases were the first ones which responded to the lymph. The lupus erythematodes, in whom reaction was not expected, received five millegrammes. After ten or twelve hours there was both a local and general reaction, and the patient presented a perfect picture of erythema toxicum, which reappeared invariably after subsequent injections. The erythema disappeared on the third day, but the temperature was still at 38° C.

The lepra maculosa anæsthetica was converted into a lepra tuberosa, and presented all the typical symptoms, but after ten injections she fails to react, even when very large doses are administered. With one or two exceptions, all the lupus cases responded to the first injection. No reaction whatever was noticed in the three cases of papular syphilides, not even after the injection of one decigramme. The gummatous syphilide presented a typical reaction, and also the epithelioma of the forehead, but this treatment being regarded useless, the injections were discontinued. The tuberculosis verrucosa cutis did not respond, even after the dose was increased to one centigramme. The sarcoma of the pharynx appeared smaller after the first few injections, but remained stationary after subsequent treatment. The same dose was injected as long as the patients reacted, and only increased when they failed to respond. According to Koch the lymph is said to produce a necrosis of the

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lupus tissues, but so far we have failed to make that important observation at this clinic. The lupus nodules have become pale and flattened, but as they are situated in the corium, the same effect might be obtained from the continued application of plasters and iodine. The remedy is said to have a predilection for lupus and tubercular tissues, but it has been repeatedly demonstrated that any *acute* inflammatory process is susceptible to its influence. The reaction is in direct proportion to the vascularity of the diseased tissues. The bacilli are not destroyed (Koch), but certain observers have noticed morphological changes in them. The bacilli produce a substance which has the property of causing necrosis of the neighboring tissues. Every lupus nodule is composed of round cells, epithelial cells and giant cells, and the bacilli are found in the latter. The number of giant cells in a given area of lupus tissue is an index to the amount of retrograde metamorphosis which has taken place. It is not definitely known whether the lymph acts upon the bacilli or the products of the bacilli. When it is remembered that only *two per cent.* of all lupus cases are tubercular (Kaposi), the fallacy of the observations of some of the most enthusiastic observers will readily be seen. The organism is said to become habituated to the lymph, and when large and repeated doses have failed to produce a reaction, it finally attacks the red and white blood corpuscles. The bacilli cause a formative irritation, and, being carried along the lymph channels, they soon form lupus and tubercular nodules in different parts of the body. So far, one observer claims to have discovered the bacilli in the blood of patients treated with the lymph, and is at present attempting to make cultures from it. "It is a very dangerous remedy for children. In tubercular meningitis the tubercles may possibly remain dormant, but when the lymph is employed it brings on an œdema of the meninges, and death invariably results. In pulmonary tuberculosis in children it will bring on an œdema of the lungs, and death results from suffocation" (Stoffella). The post-mortem examination in a case of general tuberculosis, which had received five injections of small quantities of the lymph, fifteen millegrammes altogether, and died three weeks after the last injection, showed that death was due to an ulcerative endocarditis, brought on by reabsorption. Improvement has not

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been noticed in any of the cases, but the diseased areas have become enlarged and new ones have appeared in the vicinity of the older ones.

"As an auxiliary remedy for the first few weeks in the treatment of lupus, it may be used to advantage, i. e., until the lupus nodules are flattened, but subsequently it will become necessary to resort to the old treatment" (Kaposi).

VIENNA, *February 8th, 1891.*

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ELECTRO-MAGNETIC EXTRACTION OF A PIECE OF STEEL FROM THE VITREOUS CHAMBER OF THE EYE.

By CASEY A. WOOD, C.M., M.D.

Pathologist to the Illinois Eye and Ear Infirmary. Professor of Ophthalmology, Post-Graduate Medical School.

Read before the Chicago Medical Society, March 16th, 1891.

Although the electro-magnet has had but a limited application in general surgery, it has been used with great success for the removal of steel or iron bodies from various parts of the eye. A full account of this subject has been given by Snell[1] of Sheffield and Hirschberg[2] of Berlin. Hotz[3], of this city, has also published a number of interesting cases.

Instances of this sort are not rare but the successful extraction of metallic chips from the vitreous body with preservation of the eye is sufficiently uncommon to justify my saying a few words introductory of a case of this kind which I hope to present to you to-night.

The magnet which I use is Snell's. I find that it is now manufactured by Meyrowitz Bros. and is probably familiar to many of those present. "It consists of a core of insulated copper wire, and this again is enclosed in an ebonite case. To one end of the instrument are attached the screws to receive the battery connections. At the other extremity the core of the magnet projects just beyond the ebonite jacket and is tapped, and into it screws a needle which fits closely on the end of the instrument by a projecting cap. By this means it is possible to employ any kind of needle the operator may wish or the case require, either curved or straight. Each sort of needle will perhaps be more

[1] Simeon Snell. The Electro-magnet and its Employment in Ophthalmic Surgery, 1883.

[2] I. Hirschberg: Uber die Ergebnisse der Magnetoperation in der Augenheilkunde. Graefe's Archiv. für Augenh. Abth. III. 1890.

[3] F. C. Hotz: Am. Journal of Ophthalmology. 1890.

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adapted to a particular case[4]." It will be remembered that since in electro-magnets the magnetic force decreases very rapidly as the size of the needle decreases and the distance of its point from the helix increases, it is advisable to employ as large and as short attachments as possible. Another law of electro-magnetism should not be forgotten, viz.: the attractive force is greatest at the moment when the current begins to flow. The small button which serves this purpose should therefore not be touched until the needle is in position. Instead of using a quart bichromate element formerly recommended I have employed a small storage cell. Its electro-motive force is about two volts, it admits of easy transportation and answers the intended purpose admirably.

It will readily be seen that a piece of iron sticking into the cornea, lodged in the anterior chamber, or entangled in the iris, or even having penetrated the lens capsule is much more easy of extraction than when it has entered the posterior chamber, because in the latter situation (1) it is less accessible and (2) it is very likely to be invisible owing to the intra-ocular bleeding which often obscures an ophthalmoscopic view.

In the treatment of the following case I had the benefit of the advice and assistance of my associate, Dr. W. F. Smith.

T. J., aet 24, at 8 a. m. January 27th, last, was struck in the right eye by a minute fragment that flew from a piece of steel he was hammering. He consulted Dr. John Fisher, who very properly ordered a solution of atropine to be dropped into the eye. Dr. Fisher kindly referred the patient to me and I saw him at three p. m., seven hours after the accident. He was not then complaining of pain, but felt dizzy. In the upper inner quadrant of the right cornea, close to the limbus, was to be seen a faint line which corresponded to a penetrating wound of the iris. The posterior layer of the cornea was streaked with blood and there was in addition some blood lying free in the anterior chamber. No clear view was to be had of fundus, V = fingers at fifty cm. As patient at first described the piece of steel as coming from *below* and was not very clear as to its probable size, it was thought possible that the sharp corner of a fragment might have made a wound through cornea and iris and cut its way out again. At any rate it was

[4] Snell, *l. c.* p. 7.

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decided to wait until some of the effused blood had undergone absorption.

The conjunctival sac was thoroughly disinfected, more atropine solution instilled, and the eye was dressed with boracic acid powder and a bandage. Three days afterwards—the anterior chamber is free of blood, but there is decided pericorneal injection and patient suffers from occasional attacks of pain in and about the eye. A wound in the lens can now be plainly seen through the dilated pupil. The posterior pole of the crystalline is hazy and apparently covered with blood. Two clots can be seen rolling about in the lower part of the vitreous chamber. Only a portion of the fundus can be made out. I concluded after considerable questioning of the patient that the fragment came from above the horizontal plane of his face, and as the symptoms seemed to indicate the presence of a foreign body in the interior of the eye, decided to operate.

Believing that it would not be wise to attempt its removal through the original wound, on January 31st the patient was anæsthetized and a straight equatorial incision (eight m.m. long) was made with a Graefe knife through the sclera about a centimeter behind the limbus at the lower-outer quadrant of the hemisphere. Another wound of about the same length but at right angles to this was first carried through the conjunctiva and Tenon's capsule so that when both wounds were closed the vitreous chamber was effectively shut off from the outside air. A bent and flat needle was carefully introduced into the vitreous, and after several reintroductions and "fishing" about a small bit of steel was withdrawn attached to the tip of the magnet end. Little or no vitreous was lost. A few stitches were put through the conjunctival flaps and the eye again dressed with boracic acid powder. The greatest care was observed as to the use of antiseptics, and the wound healed without the least difficulty. The pain and ciliary injection disappeared and two weeks afterwards V = fingers at one m. Since then portions of lens matter have presented in the lenticular wound, have produced some irritation, (pain, tenderness, circum-corneal redness, etc.,) which has disappeared under the use of hot applications and atropine, and the protruding masses have finally become absorbed. I propose to do an irridectomy preparatory to needling the cataractous lens,

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which I trust is capable of absorption, or perhaps of removal with Bowman's syringe. I present a rough diagram intended to indicate the probable track of the steel fragment and the site of the exploratory incision. Also the extracted metal, which weighed 17.7 millegrams.

204 Dearborn Street.

[*For Discussion see Society Proceedings.*]

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TOPICAL TREATMENT OF DIPHTHERIA AND CROUP.

By B. M. BEHRENS, M.D., Chicago.

Read before the Chicago Medical Society March 16th, 1891.

In presenting this paper to the Society, I wish it accepted as an argument in favor of an exclusively topical treatment, possessing the aim of destroying the diphtheritic infiltration wherever it is found.

It will be agreed to by the medical fraternity, that we have heard all we wish to hear about the general treatment of diphtheria and croup, and in spite of all assertions to the contrary, there is not one honest physician bold enough to proclaim this or that pet remedy as infallible. Whether it be given internally, or locally as gargle, vapor or spray, it is sure to fail, except in cases of slight extent of infection, or in cases where mother nature herself succeeds in expelling the disease. But this, gentlemen, is a complete failure, so far as the efficacy of the remedy is concerned. There are, may be, physicians who still hold to the old creed, that diphtheria is a constitutional disease with secondary local manifestations in the throat, and therefore adhere to their pet remedy as being superior to all others; but in the minds of those who hold the other view—that diphtheria is primarily a local disease and the constitutional symptoms secondary—it is evident that the present mode of treating it is inadequate. It is therefore in my estimation, and my opinion is entertained by many, an utopian dream to suppose that a remedy ever will be discovered whose specific action is of such a nature that it will check or counteract the production of toxic material, or prevent its absorption. By this I mean a remedy of a chemical nature, and not one which may be discovered by bacteriology. Periodicals, and even newspapers, are filled with "sure cures for diphtheria," that are tried to-day to be laid aside to-morrow as sadly wanting. For what can we expect but increased filth of remedies taken internally, or applied as gargles, sprays and the like, the action of which on

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the diphtheritic plagues can never be more than superficial? Whoever believes in any further effect is the victim of self-delusion, or of gross ignorance of the characteristics of the disease. And even if we must allow as to sprays at least some mechanical effect, for instance on the superficial layer of the diphtheritic infiltration, is it not more than likely that these will have no effect on infiltrations hid away in the deep pouches of the tonsils, or back of them? Besides, the danger lies not in the superficial layer of the infiltration, as we see it, as this contains only epithelium, pus cells and detritus, but in the deep layer of the mucous membrane, where absorption of the toxic products takes place, and the diphtheritic bacilli multiply. For this reason, and because as a usual thing the fauces are first attacked by the diphtheritic infection, what is demanded of us is the complete destruction of the infiltration, even if it must take place at the cost of some healthy tissue besides.

Some time ago I had the pleasure of presenting to this Society a paper on hypertrophic tonsils, in which I incidentally mentioned three cases of diphtheritic tonsillitis, with all the characteristic symptoms of the disease, which had come under my observation, and in which the disease was cut off, so to speak, by tonsillotomy. This result was to my mind satisfactory evidence that a removal, or, what is next best, a thorough destruction of the diphtheritic infiltration is the sure cure, and that nothing less will answer. I regard it as an endorsement of the destructive procedure I have always followed in my practice, and from which I have never swerved unless (by circumstances) compelled. I have never seen any reason to alter my views, or to abstain from this proceeding, unless the disease had assumed such proportions that it was beyond the reach of treatment of any sort. There are exceptions to every rule. The shortcomings of my procedure are admitted in cases that come late under observation, and where the toxic symptoms pursue such a rapid course that we are only in time to witness the last struggles of the victim of the disease, although even in the most desperate cases agreeable surprises have taken place not infrequently. We give stimulants as long as there is a spark of life, and we are just as much justified in our efforts to destroy the infiltration, as long as life exists. Unless the patient is moribund and all hope of saving life is

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gone, I never hesitate in applying my proceeding, and when I say that I have never regretted it even in the most desperate cases, this is the best recommendation I can give it. We must remember that even in such extreme cases as diphtheritic infiltration of the throat, nose and larynx, the principal locality where the absorption goes on is the throat—I mean the tonsils and their immediate surroundings,—not only because this place is usually the first infected, but also because of this part being the most richly provided with glandular structure that not only furthers the absorption of the diphtheritic poison, but also is the least likely to be interfered with by any remedy, whose aim is only a superficial action and not a total destruction of the infiltration itself. It is therefore in my estimation no contraindication when the diphtheritis extends above or below; on the contrary, by checking the main source of absorption, so much is done towards checking the spreading of the infiltration, that we then can regard infiltrations in other localities with a certain degree of ease. In short, I mean to say, that the disease is more than half conquered when we can succeed in destroying the infiltration *in* and *around* the tonsils. This may be deemed a bold assertion, but I can only say it is my conviction. It will be willingly admitted that with such complications as I have mentioned, the control of the disease is lost more or less, so far as topical treatment is concerned. The difficulty increases in the same proportion that the infiltration extends, and the natural deduction from this is that the destroying process is best adapted and most likely to give the best results at the onset of the disease. What is easy and feasible to-day is perhaps out of the question to-morrow. If it was practicable I would say: never go to a case of diphtheria without the galvano-cautery, but I must limit my desire to nitrate of silver. If such a proceeding be commonly adopted it will be a question for future solution as to what cautery is best adapted for the purpose of destroying the infiltration. I must hold to the nitrate of silver as being a remedy whose action is deep enough for the purpose, which does not extend further than we wish, and the superbundance of which can be immediately neutralized with a harmless stuff—common salt. My experience is limited to this, and because of its having served me so well in my practice, it has become my pet remedy; but of course, I am

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willing to give it up for another cauterizing agent, that should prove to be better. That is not here the question; which is only as to the merit of my proceeding.

To come now, gentlemen, to the details of my method, I will state that I never call on any case of throat disease without my head-reflector, tongue depressor, cotton and cotton holders, and the nitrate of silver. This I have mitigated with ten per cent. nitrate of potash in order that it may not so easily crumble or break. While it is melting I dip my probes in it, one with a blunt, and another with a cone-shaped sharp point, this last for the purpose of bringing the cautery deep into the follicles of the tonsils. The ends of the probes are roughened, so that the nitrate of silver will not fall off. The first thing I do is to place the light so that I can with ease throw it from the reflector into the throat. As objections in some form usually are met with in small children, I place them with the lower half of the body on somebody's lap while I take the child's head between my knees—the position we employ in treating eye diseases in children. By pressing the tongue down and mopping off the most of the detritus I can at once get an idea of the extent of the infilitration. The first object of my attack is the locality in and around the tonsils, and I always satisfy myself that the work is done here thoroughly for the above-mentioned reason. Next in the same sitting or later comes the cauterization of other localities. A little while afterwards, I apply a solution of common salt with the cotton armed sticks.

As said above, we have to some extent lost the control of the case, where diphtheria extends upwards to the nose or downwards to the larynx, at any rate, so far as topical treatment is concerned, so I shall only add a few words about this complication of the disease.

The treatment must here be symptomatic and according to the severity of the symptoms. If the nostrils are clogged with mucus and pus, I apply a nose douche of some non-irritant, disinfecting fluid in grown-up patients; in small children the air-bag alone will do in many cases, and must do, especially as injecting a child's nostrils usually meets with a stubborn resistance. From the effects of the nitrate of silver in other localities we may infer that this agent would be likely to do much good here also, but

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in such strength as to be of any use it would not be advisable to employ it, because of its irritating effect on the non-affected parts, and its causing often quite severe pain. With our powerlessness to treat this part properly, it is consoling to know that there is no immediate danger to the patient's life or very little compared with the danger involved in diphtheria of the larynx. Diphtheritic and croupous infilitration are clinically the same disease. The œdematous swelling of the mucous membrane in the larynx, that accompanies the infiltration, together with the paralysis of the abductor muscles, are the main factors in bringing about the threatening suffocation.

When I propose to apply here also the same agent, I am well aware of the difficulties and uncertainties of the procedure. Still it has been to me in my long practice of so much service that I feel compelled to recommend it. It is only fact and no fiction, that cases that seemed to demand an immediate tracheotomy were benefited by an introduction of a twenty per cent. solution of nitrate of silver repeated as often as the symptoms required. For introducing this solution into the larynx I employ a bent cotton holder having about the same angle as that which is used for introducing a tube into the larynx. After having soaked the cotton in the solution I squeeze out most of it again, pull the patient's tongue out as far as it can be done without too much discomfort to the patient, and by a rapid movement introduce the instrument into the larynx. A choking spell, that soon passes away, indicates the success of the proceeding. In many cases it is not practicable to pull the tongue out, but this same experiment can be made a success by simply pressing the tongue down with the tongue depressor. There is no harm in repeating it, if the first attempt fails, because the diphtheritic infiltrated fauces can easily stand a twenty per cent. solution, and it must not be given up until the choking announces success. But, on the other hand, the more rapidly such manipulations are made the better for patient and physician. How often those applications are to be made depends upon the severity and duration of the symptoms. To keep down the swelling in the larynx an external application of icebags, changed as often as required, will be found of very much utility, and children when used to them will very often crave for them if

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they are taken away, although there is otherwise not much comfort connected with their use.

This, gentlemen, is a general outline of my method of treating this disease. It would take me too long to detail it further, and I would probably trespass too much upon your indulgence, if I further mentioned the advantages and certainly also the shortcomings of this proceeding in dealing with a disease that presents often good results under the most innocent and expectant treatment, or baffles the skill of the most expert and conscientious physician. I have no statistics with which to support my statements. I can only say that for fifteen years I have treated no case of diphtheria in any other way. When one physician states that he lost some cases, because his patients would not take the medicine, and another one never lost a case with this or that drug, the value of statistics becomes very problematic. Read the other way, it means only that he never won a case. Anybody who believes such stuff stands on an equal footing with the laity who will swear to a physician's ability, although many a home deprived of its prattling children bears a pitiful testimony to the contrary. A bloody satire, gentlemen, on the powerlessness of treatment at present.

Only in hospitals for diphtheritic patients, where one or the other proceeding could be given a fair trial, would statistics be of any value; but so long as no such opportunity exists, individual claims for this or that remedy or procedure must be considered of doubtful merit. I do not expect any unconditional acceptance of my views, but I do expect an unconditional surrender of the old ones. We owe thanks to the bacteriologists, who have branded this disease as a filth disease—that is, one bred by filth and breeding filth and whose invasion usually starts in the throat. There is no loop-hole through which we can escape the urgent necessity of doing away with the filth. Nobody would think of soaking a diphtheritic ulcer externally with some indifferent drug, but he would cauterize it in one way or another to bring about healthy granulations and thereby check the hideous disease. And why not then do the same thing in the throat? What excuse is there other than customary laziness or hopeless fatalism for not even taking the trouble to inspect the throat, but only prescribing some innocuous drug that can only increase the filth

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at best, but never have the effect of checking the production of the toxic material or of preventing its absorption? We scoff at the Christian science-healers and faith-cures, but if this way of treating diphtheria is not faith-cure, then I do not know what is.

Before finishing my paper, allow me to mention what I consider a real advance in the treatment of this disease—that is, the use of the spray. It does not meet all the requirements, but I cannot help regarding it as a step in the right direction. It has a sound basis, so far as it intends to remove the filth, further its expulsion and sterilize the infiltrated part. But I fail to see how we can expect from it any effect at all comparable to that which destruction of the infiltration yields. I am more inclined to believe that these two agents—cauterization and spray—employed simultaneously would give the best results, but I have not employed the spray so often, that I am prepared to speak definitely about it. But then the spray would have to be employed almost continuously, and not once in a while and by inexpert hands. If such a proceeding can hardly obtain any footing, it must rather be ascribed to the difficulty of practicing what we preach, than to the failure of the method.

Another achievement that apparently indicates progress is the intubation of a diptheritic larynx. The dexterity which this implies would find a better field if it were used for the purpose of effecting a change for the better in the diseased condition of the larynx. This it cannot do, and has, therefore, no more justification than being a bloodless relief from suffocation. The enthusiasts do not claim more for it so far as I know, unless it is to raise the percentage of successful results on those intubated, after it becomes more commonly adopted and improvements in details of the proceeding obtained. This has not been effected up to this time. About thirty per cent. saved sounds better than seventy per cent. not saved. In this it stands equal with tracheotomy, but in the inflicting of suffering on humanity it stands far above. How far it will succeed in replacing tracheotomy is a question the future will solve, but even if it does, I can not see any grand achievement in it as a method of dealing with a filth disease. By either of these two methods the disease is being complicated, certainly from necessity as long as fatalistic prescribing reigns supreme, but when the view

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once shall be commonly accepted, that a diphtheritic infiltration in the throat ought to be as severely dealt with as a diphtheritic ulcer externally, then there will be less call for either of them. If we are to attain this end, then it is our duty to arm ourselves with the head-reflector to see for ourselves, to make the diagnosis and carry out the treatment, and not merely prescribe something. This reached, something better is sure to follow.

70 STATE STREET.

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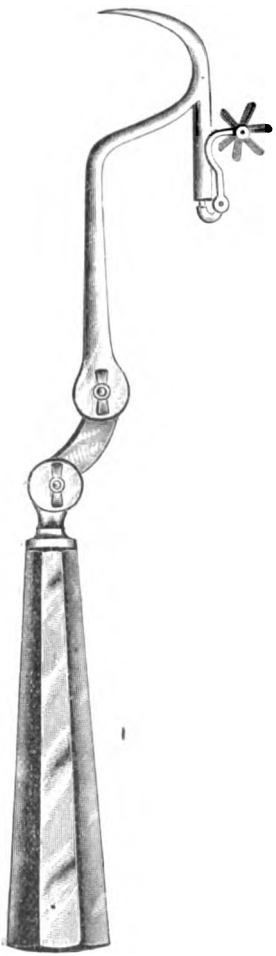
Medical Advancement.

Dr. OLIVIERI'S NEW TRACHEOTOMY INSTRUMENT.

Presented to the Chicago Medical Society, January 19th, 1891.

By A. Logorio, M.D.



It is with pleasure I present to the Society a new tracheotomy instrument invented by my friend, Dr. Leonida Olivieri, a graduate of the University of Genoa, and now a resident of this city.

The first object of his invention was to provide an instrument to be used in making a primary opening into the wind-pipe, and which by its peculiar construction will clearly demonstrate to the operator when the trachea is entered, and thus prevent the possibility of a false passage being made.

This instrument, as Dr. Olivieri will demonstrate shortly, consists of a sharp hook, provided with a channel or groove from near the point to the highest part of the curve. The lateral dimension of the groove gradually increases as it passes back from the point until it reaches the highest part. This hook is tangentially supported by an arm continuous with the handle for convenience of manipulation. This arm is jointed to the handle with a suitable link by means of disk-shaped bosses, provided with radial grooves on their surfaces. When brought into contact by means of screws, they are bent and locked together so that the handle may be placed at any angle desired.

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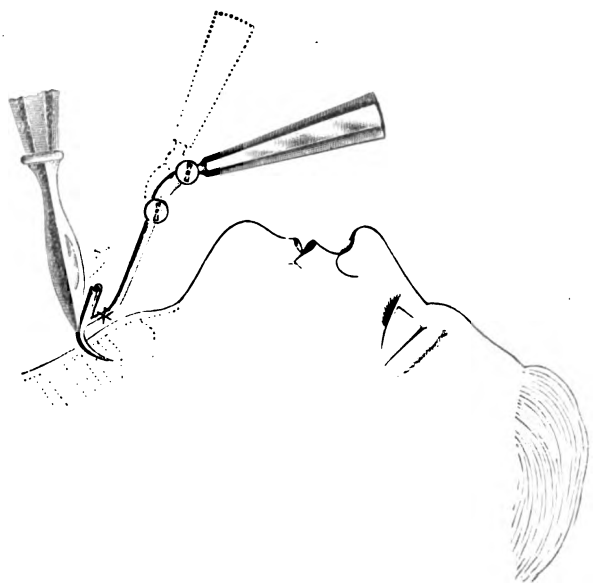
The most ingenious part of the hook consists of a small delicate wind-wheel, the axis of which is journaled in the extremities of suitable lugs arising from the rear end of the highest part of the hook. The ends of the vanes of this wheel are brought at right angles into the groove near the incision.

When the patient is placed in a convenient posture ready for the operation the physician marks the position of the lowest part of the cricoid cartilage (or some other point of the trachea if he prefers) and inserts the point of the hook slowly and carefully into the wind-pipe.

The air exhaled from the lungs rushes out through the groove and the wind-wheel is revolved more or less rapidly as the air from the throat passes it and thus makes known to the operator that his instrument has reached the objective point.



The delicate wind-wheel is mainly necessary when the patient is exhausted and weak, and the exit of the air through the groove is so slight that the operator may be deceived. When it is evident that the wind-pipe has been entered, the surgeon turns the wheel up or sideways and using a bistoury in the groove of the hook as

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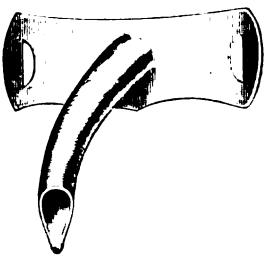
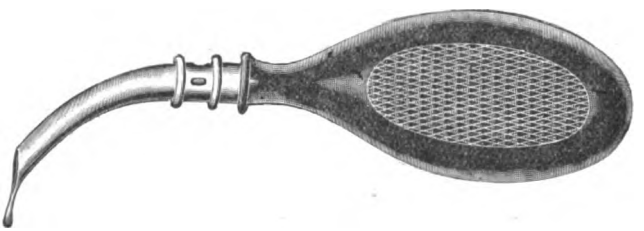
a guide enlarges the opening; he then immediately inserts a conductor, so made as to widen the wound, and introduces the tube.

The second part of his tracheotomy instrument consists of a curved tube which is properly attached to a handle serrated along its sides so as to afford a good hand-grasp for the operator. The outer end of the tube is cut away obliquely from its upper to its under side so as to provide a tongue which tapers to a rounded point, which can be easily inserted into the wound made by the bistoury without causing laceration. The end of the tube next the handle is provided with one or more openings in it to permit the escape of the air while the introduction of the canula is made. Thus this holder combines the offices of conductor and dilator at the same time.





The canula to be fixed in the throat has its advanced end cut away obliquely so as to conform somewhat to the shape of the holder which it surrounds and with which it is inserted.

In conclusion this instrument enables the operator to perform tracheotomy by three short stages:

1st. Insertion of the hook into the wind-pipe.

2nd. Slitting with the bistoury.

3rd. Introduction of the canula.

THE PENIS PERCUSSION REFLEX.

We learn with each year a few additional objective signs of disease, and with these come increased precision in diagnosis. It is but a few years since the significance of absence or variation of the patellar tendon reflex has been understood, though the phenomenon of contraction of the thigh muscles when the

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tendon was struck, must have been known to the school boys of ancient Rome. Since the diagnostic value of alterations of this reflex have been learned, many others have been found and studied. The last is announced by Dr. C. H. HUGHES (*Alienist and Neurologist*, January, 1891), under the term "virile reflex," because if it is impaired or lost, in a person with a healthy spinal cord, it indicates a loss or abeyance of the sexual function. The reflex is produced by grasping the penis by the foreskin, between the index finger and thumb, and pulling the organ firmly toward the umbilicus, at the same time allowing the ring and little fingers of the same hand to rest upon the dorsum of the organ. If while in this condition, the organ is struck sharply a distinct retraction of the bulbo-cavernous portion will be felt. Dr. Hughes says that it is often, but by no means always, found in sympathy with the other reflexes of the lumbo-dorsal spine. He has found it absent in old men who have acknowledged complete virile incapacity, and also lessened in neurasthenia and masturbation.

If it shall appear upon further investigation that the claims made by Dr. Hughes are correct, we certainly have a valuable diagnostic sign in a considerable number of medico-legal cases. It is a common thing for men, especially those advanced in years, if accused of sexual crimes, to plead total impotency. So far as the examination of the medical jurist is concerned, he can only report as to the conformation of the organs. The virile power is beyond his investigation. Then, too, it ought to prove of differential diagnostic value in forms of psychical impotency. We sincerely hope that the sign may prove to be true, as it will then prevent the somewhat unfortunate *contretemps* of a man being convicted of bastardy, and his wife obtaining a divorce on the ground of impotency, at the same term of court.—*Jour. Am. Med. Ass'n.*

SUPPURATIVE PERITONITIS.

JOHN J. REID, M.D. (*Archives of Pediatrics*, January, 1891). The following brief report of a rare case of suppurative peritonitis is of interest on account of its rarity and on account of the tolerance shown by the peritoneum to a large accumulation of pus.

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A girl, five years of age, came under the observation of Dr. F. A. Thomas, of this city. The symptoms strongly suggested typhoid fever. At the end of the first week tympanites, diarrhœa, and abdominal tenderness were noted. During the second week dulness was found to exist over the lower portion of the abdomen. This gradually increased till, at the end of the fifth week, the abdomen was greatly distended and resembled a case of ascites. There was considerable prostration. I was suddenly sent for at this time, and found that rupture had taken place at the umbilicus, and that pus was flowing very freely from the opening.

I washed the peritoneum out with warm water, and repeated the operation on the following day. A compress was then placed over the abdomen. The child did well, and the washing was not repeated. Within a brief period the child was about as well as usual.

The regret in the case was that there was not an opportunity to see the case as often as could have been wished, but the facts presented show that pus must be considered as a possible cause in peritoneal distention.

BAD CASES OF ADHERENT PLACENTA.

Dr. Pajot (*Annales de Gynéc.*, November, 1890, p. 386) read before the Obstetrical Society of Paris an extreme and fatal case of adherent placenta. The case occurred in the practice of Dr. Clopatowsky, of Bogota. He was called in after a lingering labor which had been mismanaged. Great quantities of ergot had been given, and after the birth of the child the umbilical cord had been torn off in attempts to extract the placenta. Dr. Clopatowsky found the uterus in a state of tetanic contraction excepting at one point, probably the site of the placental attachment. Anodyne injections to check the uterine spasm, and two attempts to detach the placenta manually, proved failures, and some placental tissue was left behind. Rigorous antiseptic treatment was carried out; nevertheless rigors, high fever, tympanites, and prostration set in, and the patient died on the third day. Dr. Clopatowsky asked if, in an extreme case like the above, where the risks from leaving irremovable portions of placenta were so great, it would not be justifiable to perform Porro's operation, the only way of getting rid of foci of infection. In the discussion which followed the

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reading of this case, Dr. Pajot considered that the proposition was justifiable. Skutsch, of Jena, had once carried it into effect. Dr. Budin recommended the careful kneading of adherent placental tissue with the fingers; by this method the adherent structures could be removed as far as the true uterine wall. Antisepsis could afterwards be carried out with facility. Dr. Charpentier insisted that the curette could be safely used in cases of total as well as partial adhesion of the placenta. The obstetrician could tell when the curette touched uterine tissue by the peculiar sound then produced. Dr. Pajot, on the other hand, declared that Dr. Charpentier's advice was perilous. In retention after abortion the curette was useful, but it was hardly safe in a case of complete and intimate adhesion of the whole placenta, as in the instance under discussion. There is no "peculiar sound" when the soft tissue of the uterus at term is scraped. So absolutely inseparable was the placenta in some patients (as he had verified by examinations in the dead house) that no treatment short of amputation of the uterus appeared justifiable. Dr. Bonnaire also quoted a case where the curette completely failed. The patient died, and it was afterwards found that the placental tissue was absolutely inseparable from the uterine wall.

VITAL PHENOMENA AFTER DECAPITATION.

The late Paul Loye maintained that decapitation put an immediate stop to all vital phenomena. M. Laborde had the opportunity of noting in the case of the notorious assassin of the process-server Gouffe, the occurrence of the following phenomena, the presence of which disproves the above assertion. Immediately after the execution there was noted marked corrugation of the forehead extending to the vertex; associated ocular movements; opening and shutting movement of the mouth of a respiratory type. The palbebral reflex could be plainly evoked for from fifteen to twenty minutes after decapitation, during which time the iris remained sensible to the stimulus of light. Simultaneously with the deposit of the trunk in the basket there were noticed up and down movements of the arms, plainly visible despite the fact that they were firmly ligatured to the sides. This phenomena is, it appears, well known to Diebler's assistants, who,

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in their figurative language denominate it "the flapping of the wings." The feet were strongly retracted, and when M. Laborde pinched the arm, the trunk being in the basket, a reflex movement was very apparent. As M. Laborde remarks, these reflex movements are strictly analagous to those perceived in the abattoirs, where the stimulation of a member immediately after felling produces a violent kick.—*Paris Correspondent Jour. Am. Med. Ass'n.*

TUBERCULIN IN LEPROSY.

Dr. JULIUS GOLDSCHMIDT, of Madeira, gives an account (*Berl. klin. Wochenschr.*, January 12th, 1891) of his experiments with Koch's fluid in five cases of leprosy, four of which were of the tubercular and one of the anæsthetico-paralytic type. In four of them the disease had lasted more than twelve months, in one it was of quite recent origin. Injections of less than one milligramme produced no appreciable effect. The administration of doses of one milligramme caused in three cases a general reaction, which came on more than twenty-four hours after the injection; in two of these some local reaction also took place. Stronger doses (never, however, reaching one centigramme) caused fever in all the cases with one exception; in one of the patients intense and prolonged local reaction was also noticed. The liquid, if placed in immediate contact with the diseased parts, seemed to cause powerful irritation. Goldschmidt considers that his experiments prove that Koch's remedy causes both general and local reaction in leprosy, a fact which he thinks must detract from its value as an aid to diagnosis in tubercle.

TUBERCLE BACILLI IN THE BLOOD.

An observation which, if confirmed by other observers, will make a most serious impression on the opinion of the profession as to the safety of Professor Koch's treatment, has been published in a recent number of the *Berliner klinische Wochenschrift* by Dr. VICTOR LIEBMAN, of Trieste. The communication, it is expressly stated, is only a preliminary one, but it is of such very great importance that it is desirable that all those who are working with the fluid should make early investigations as to its correctness. From the circumstantial way in which these statements are

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detailed it would appear that the research carried on by him must be essentially correct in all points. No similar research having been published, Dr. Liebman has nothing with which to compare his own observations, but he states very distinctly that though control phthisical patients who had not been treated with the Koch fluid were found to have in their blood no tubercle bacilli, those patients who had received one or more injections of the fluid were no longer in the same condition, as tubercle bacilli, not in large numbers certainly, but still in sufficient numbers to be pretty easily demonstrable, were circulating in the blood stream. In order that no fallacies might creep in through the presence of accidental impurities, all the slides, cover glasses, and apparatus with which he was working were sterilized with hydrochloric acid and absolute alcohol; the tip of the finger of the patient was then carefully washed with ether, alcohol, and distilled water, a needle previously sterilized by being passed through a flame was used to make the puncture, and the blood drawn off was spread in thin layers on cover glasses, dried and heated in the ordinary manner, after which they were stained for half an hour in a solution of fuchsine in carbolic acid, washed thoroughly with distilled water, and then kept for one minute in the following solution : 1.5 grammes methylene blue, 30cc. absolute alcohol, 20cc. sulphuric acid, 50cc. distilled water. The observations were made in nine cases, and Dr. Liebman found, in all those cases in which there was marked reaction quickly following the injection of small doses of the fluid, that bacilli could be demonstrated in the blood. Hitherto it has been supposed that tubercle bacilli were present in the blood only in cases of acute miliary tuberculosis resulting from the invasion of the blood stream through the ulceration of the wall of a vein, or through considerable and rapid destruction of tissue by the tuberculous lesion. Here, however, we have a number of cases of consolidation of the apex of the lung, of small cavity formation, of infiltration of both lungs, affection of the larynx, ulceration of the intestine, and of tuberculous joint disease, most of them, at any rate, running comparatively a chronic course; in these, contrary to the usual course, and differing from the control cases, bacilli were found in the blood. The importance of this fact will not be overlooked. It bears out in a most remarkable manner Professor Virchow's

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observation that the bacilli "appeared to be mobilized," and to be much more readily transported from the diseased tissue to the circulating fluids. Of course, in a matter of this kind, theory must not be set against facts. At the same time, it will not be wise to take alarm unnecessarily when any unforeseen accidents occur, although these accidental conditions must be examined most carefully, and probed to the very bottom. We have still much to learn about Koch's treatment and its effects on the tissues and on the patients.

THE "GLASS-ROD TEST" FOR DIPLOPIA.

THE "glass-rod test" for diplopia, which was suggested by Dr. MADDOX, is so simple and efficient that it is likely to supersede those at present in use. The test object is a small flame, such as a gas jet a quarter of an inch high. Before one eye is placed a glass rod, care being taken that no light enters the pupil on either side of it; the effect of this solid cylinder is, of course, that the flame is seen as a fine line of light, having a direction at right angles to the long axis of the rod. The other eye is left uncovered. The line forms an object which is so dissimilar to the flame—as seen by the uncovered eye—that there seems to be no inclination to fuse them. Moreover, the linear nature of the image renders it easy to define its position and to measure the amount of deviation by means of a scale placed immediately behind the flame.

Any glass rod will answer the purpose. Messrs. Curry and Paxton have constructed one that is conveniently mounted with a stenopic slit to fit an ordinary trial frame.—*Brit. Med. Journal*, February 21st, 1891.

HERNIA THROUGH THE FORAMEN OF WINSLOW.

MICHEL GANGOLPHE (*Lyon Médicale*, t. lxiv., p. 607, 1890) reports a case of this rare condition. The patient, a man aged fifty-seven years, was seized, twenty-four hours before admission to the hospital, without any appreciable cause, with violent intestinal colic, vomiting, and inability to pass gas or fæces. Four years before this he had had an exactly similar attack, which had easily been relieved by the use of enemata. The obstruction and vomiting continued. There was almost no

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abdominal distention. The pulse and general condition were good. Laparotomy was performed four days after the beginning of the attack. The small intestine was explored, and, with gentle traction, there was brought to view a portion which had been subjected to a circular constriction, as shown by the white ring around the bowel and the collapsed portion of the gut beyond. It was supposed that the obstruction had been relieved, and the abdomen was closed. The symptoms continued as before operation, and the patient died three days later. The autopsy showed that almost five feet of the small intestine were contained in the lesser cavity of the peritoneum, having entered through the foramen of Winslow. At the first operation only a portion of the gut had been withdrawn, and the obstruction consequently continued.

RUPTURE OF THE MEMBRANES TWENTY-FIVE DAYS BEFORE THE BIRTH OF A LIVING CHILD.

Egan (*Medical Record*, p. 457, 1890) reports the case of a multipara who had had four miscarriages, the cause of which had not been ascertained. When the os was dilated to the size of a dollar, the head presenting, the membranes ruptured. The pains were trivial in character, and the head receded and descended alternately. A hypodermic injection of half a grain of morphine in four doses produced a night's rest. The pains continued ineffective, and the patient resumed her household duties until twenty-five days after the rupture of the membranes, when a living child was expelled. But one opening could be found in the membranes.

SOME OF THE RARER EFFECTS OF PEDICULI.

Jamieson notes (*British Journal of Dermatology*, vol. i. No. 10) the somewhat rarer effects produced by pediculi under the two headings—Local: 1. Maculæ cæruleæ; 2. Pigmentation. And Reflex: 1. The presence or absence of itching; 2. Pyrexia.

The so-called maculæ cæruleæ, or *taches blenatres*, are steel-gray, pea to finger-nail sized stains occasionally to be seen on the trunk and the inner aspects of the thigh and arm. They were formerly thought to be indicative of fever, but observation and experiments have shown them to be due to pediculi pubis.

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The brownish pigmentation is not uncommon, and results from the hyperæmia produced by the continual irritation of the pediculi corporis and the consequent scratching. It is usually brownish, but exceptionally may be almost black.

As to the reflex effect, itching is the rule, but in a few instances it has been entirely wanting; and, according to Jamieson, in those cases which show maculæ cæruleæ. Pyrexia has been noted in rare cases, the temperature reaching several degrees above normal, which has entirely subsided after a bath and change of linen. Two such cases are briefly referred to. The pyrexia, apparently, was due to peripheral irritation; in neither of the cases was there any inflammation of the skin.—*American Journal Medical Sciences.*

REMOVAL OF CYST FROM A KIDNEY.

SLAJMER (*Centralbl. f. Chir.*, No. 5, p. 164) reports a case of movable kidney, which contained cysts. The patient, who was a woman, aged fifty, had previously been perfectly healthy. The tumor, which was of a doubtful nature, was situated on the left side of the belly. She had been confined, in all, three times, and her periods had ceased three months previously. The growth was close up under the ribs, and accompanied by no pain or urinary trouble, excepting that the water had not been so plentiful within the last few months. On opening the abdomen there were clearly detected two swellings, the upper one more or less kidney-shaped, and the lower evidently cystic in character and covered with a shining layer of peritoneum. Under these circumstances a second incision was made at right angles to the first, so that the swelling could be reached on its retro-peritoneal surface. It was then discovered that there were two cysts, one about the size of a small apple, and the other equal in bulk to a large orange. The cysts were emptied and part of their walls cut away, the edges being brought together with stitches; the peritoneum was carefully closed up, and the kidney sutured into its place posteriorly, with an excellent result.

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Editorial.

PUBLIC CARE OF EPILEPTICS.

Every lay person as well as physician can recall numerous instances of epileptics in the later stages of the disease who are standing in urgent need of a proper retreat where they can be employed, have sufficient liberty and receive the watchful care their malady requires. At present in this country there is no systematic attempt either by private enterprise or public benefaction to give this defective class the shelter and treatment they demand and which humane promptings readily suggest. An epileptic now to receive hospital attention must be able to pay the large expense of domicile in some private institution which only receives him under protest and with reluctance, or wait until he has become imbecile or periodically maniacal, when he may possibly be admitted to the institutions for the care of the insane. Two other ways are open, depending upon the social station of the individual. He may go to the poor-house, or if his friends are able to care for him be kept in the family, a menace to the comfort and sometimes to the safety of all, an uncloseted skeleton, a cause for depression and anxiety which may lead others near him with like tendencies to be hastened down the same decline. Under any and all these circumstances he does not receive the attention and is not allowed the freedom so essential to his physical interest, but housed up and secluded, overfed and unemployed, he rapidly degenerates into a vegetative existence to be broken by bursts of violence or prolonged convulsions and death is merciful when it closes the scene.

In the State of New York a bill has been introduced before the legislature for the appointment of an expert commission

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to consider and select a suitable site and plans of construction for an Epileptic Colony, the purpose of which is the education, employment, care, and treatment of all epileptics and epileptic insane in that State, including those in almshouses, insane asylums and those not in the public charge. The cottage plan is mentioned and ultimately is to afford provision for the care of one to two thousand epileptics. Very sensibly the bill provides that the institution be located in the country but still not far from New York City.

Hospitals for epileptics and epileptic colonies are innovations only as far as this country is concerned. Their value and practical workings can be seen in Europe and are a source of much satisfaction to those in charge of them. Many suggestions at once present themselves regarding the proper size of such colonies or hospitals and concerning details, but if the central idea to have something done in this direction can be carried the rest may be temporarily laid aside.

Not only are such institutions of the highest value for chronic epileptics, but in suitable hospitals more hopeful cases could be much better managed than is any way possible in dispensary or private practice. The nature of the disease makes these sufferers most difficult to deal with from any point of view, and the control of the single and extremely important item of diet is well nigh impossible outside of such regulation and supervision as only can be afforded by hospital residence. It may not be amiss to object to the gloomy prognosis so usually made in this disease but which under incomplete control of the patient is too frequently justified in the sequel. Should New York succeed in the present proposition the experiments under the law will receive careful attention, but in the meanwhile philanthropists who are seeking desirable fields for their endeavors and bequests cannot do better than to construct hospitals for epileptics.

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Obituary.

Dr. Charles T. Parkes was born August 19th, 1842, at Troy, N. Y., the youngest son of ten children, five of whom survive him. His father, Joseph Parkes, an Englishman, came to Chicago in 1860. At that time the Doctor was a student in the University of Michigan, from which institution he afterwards received the degree of A. M. He enlisted in the army in 1862 as a private and was discharged three years later as a captain, his promotion being the result of mental energy and bravery.

At the close of the war he returned to Chicago and began the study of medicine as a special student under Dr. Rae, Professor of Anatomy in Rush Medical College. He was graduated from this college in 1868, and was at once appointed Demonstrator of Anatomy. This position he held until his appointment as Professor of Anatomy in 1875.

His remarkable success as a teacher of anatomy, arising from a most thorough knowledge of his subject and a most clear and concise method of demonstration, not only excited enthusiasm and love in all his students, but also gained for him a wide reputation as a most able anatomist. In 1887 he was elected Professor of Surgery—successor to Prof. Moses Gunn—and in this position he was gaining world-wide renown at the time of his death, which occurred after a short illness from pneumonia March 28th, 1891. At this time he held the position of Treasurer of Rush Medical

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College. He was attending surgeon to the Presbyterian Hospital; surgeon-in-charge of St. Joseph's Hospital; surgeon-in-chief to the Augustana Hospital; consulting surgeon to the Hospital for Women and Children, and Professor of Surgery in the Chicago Policlinic. He has held the Presidency of the Chicago Medical Society and the Chicago Gynæcology Society.

As a surgeon and as a teacher of surgery Prof. Parkes had few equals and no superiors. His diagnoses were positive and almost invariably correct, even in the most difficult cases. His comprehensive mind grasped all the conditions present and at once constructed a complete clinical picture. All surgeons possess to a greater or less degree the faculty of intuition; in Dr. Parkes it amounted to genius. His extraordinary success with the most formidable surgical cases was due, first to his clear judgment and his great manual skill and dexterity, and next to his most concientious care for the minutest detail which might insure to his patient all possible chance for recovery. He never spared himself; he always gave the best of his knowledge and of his strength. His observation was most acute, his mind retentive: by means of which he accumulated a wealth of experience which his active intellect applied without hesitation. When spoken to concerning the rapidity and masterly manner with which he disposed of case after case, his usual reply was: "If you know what you wish to do and how to do it, it is not necessary to be all day about it."

A man of large heart and tenderest sympathy, he was considerate and gentle with rich and poor alike. It was most touching and beautiful to see this man of enormous frame handle a pauper child with the tenderness of a mother. And he was as generous as he was kind; many are the poor

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whom he not only treated free of charge, but at the same time supported at the hospital.

Dr. Parkes' literary work began with a very important paper on Gun-shot wounds of the abdomen, based upon original experiments and demonstrations—the first work of its kind in this country. Of late years his writing consisted chiefly of the report of clinical cases of great interest and in the publication of his clinical lectures. During the past few years he had begun to accumulate material for a work on Abdominal Surgery and one on General Surgery, but unfortunately these works are not near enough completion to be available for publication.

Dr. Parkes was a warm friend of the student, the fellow practitioner and the patient. His sudden and too early death has brought the profoundest sorrow to hundreds whom he had educated and to thousands whose sufferings he had relieved. During the last illness of Prof. Gunn he talked much of his college as he had known it during the changes of the past twenty years, and he spoke frequently of his personal relations with Dr. Parkes, first as a student, afterwards as an assistant—of his rapid and steady advancement in his profession, his growth in popularity; and paid this tribute to his colleague: "I know of no one in whose hands I would sooner trust my life and my reputation and my property."

A. J. Ochsner.

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Society Proceedings.

REPORT OF THE SPECIAL COMMITTEE OF THE CHICAGO MEDICAL SOCIETY ON INSPECTION OF THE COOK COUNTY INSTITUTION AT DUNNING.

Accepted by the Society January 6th, 1891. Referred to the Board of County Commissioners through Dr. J. R. Brandt, and printed by their request.

To the Chicago Medical Society:

Your committee having visited and inspected the Cook County Charitable Institutions at Dunning, Illinois, having conferred with their respective superintendents and having discussed the situation thoroughly, desires to respectfully submit the following report with its contained recommendations:

I. Management.

It appears to your committee that the management of these two institutions, the County Asylum for the Insane and the County Infirmary, could advisably be united under a single administrative head. The proximity of the buildings, the apportionment of land and the large number of strictly medical wards in the infirmary make such an arrangement one of feasibility and propriety. In this way a diversified hospital service could be arranged that would attract the best medical talent to the staff and secure to the superintendent's position, an adequate and suitable salary. By this plan, too, the land could be most suitably managed for the general good and the whole place arranged on a systematized and business-like footing with great advantage from the economic and charitable standpoint, and the combination of many departments now maintained in duplicate could be effected.

If such an arrangement cannot be made it is our unqualified opinion that each of these institutions should have a single responsible head to whom every other individual on the pay-roll

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should yield obedience and loyalty. He should appoint all subordinate officers, including the engineer, such appointments to be confirmed by the County Board of Commissioners, and he should be able to remove them at any time for cause. In no other way can that discipline and thorough supervision be maintained upon which depends everything in the proper administration of these charities, and in no other way can the responsibility for such administation be properly placed. These and the following considerations would apply equally were the two charities combined as above indicated. We find at the asylum an engineer practically independent of the superintendent, who must nevertheless countersign his requisitions for tools and supplies without the ability to amend or direct them though they may make ill-advised inroads upon the general appropriation for the maintenance of the household, the proper disbursement of which he is supposed to control. The engineer is only under a slight moral obligation to obey the orders of the superintendent, and in numerous past instances former superintendents have been openly defied with impunity by this functionary. As the lighting, heating, ventilation, water supply, and fire protection, over which in the hygienic administration of the house the superintendent should have complete control, are thus vested in an independent department, the arrangement is, and must continue to be, subversive of the best interests of the institution and the welfare of its inmates.

The superintendent should also have the sole power of engaging and discharging employés, and in the exercise of this duty should be absolutely unhampered by outside control. It has been the uniform experience of all officers in such institutions that people who are recommended for the various minor positions by those in political or other influential position never render earnest, reliable and painstaking service and are not equally amenable to the necessary discipline with those who have no such support. In considering applications for work, therefore, we would urge that preference be always given the applicants who present themselves simply upon their merits. To prevent unpleasant charges of nepotism, which are only too gladly made by self-styled reformers, relatives and even intimate friends of the superintendent and officers should never be engaged. For

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reasons readily understood, morever, that rigid impartiality, the basis of true government and proper management in such institutions, can not be maintained if these persons are involved.

Your committee also find a farm manager who is independent of the superintendent, and in consequence there is no harmony of action in the management of the land and the employment of the inmates thereon, both of which are highly important considerations, as will be shown later.

We would advise that the medical staff at the asylum be increased, and the superintendent thereby relieved of numerous business and minor details and enabled to give more time to the strictly medical duties and researches properly devolving upon his office. In no event, however, should any office, such as assistant superintendent, be entrusted to one not professionally qualified by liberal medical training to take full control of the hospital during the absence or illness of the superintendent. The appointment of a lay person, whatever may be his qualifications, to such an important position is practically a return to the dual system of management which formerly prevailed, with the most unfortunate results.

We would recommend that the superintendent be paid a salary commensurate with the responsibilities and labors of his position and equal to what might be earned by broadly educated and well-qualified members of the profession in an equally prominent rank in medical practice. It should at least be no less than that paid to the superintendents of state institutions for the insane.

II. Policy.

Your committee recognize that in the care of the insane the best results are to be obtained in hospitals of a moderate size, where suitable classification, clinical and otherwise, of these unfortunates is possible. There the interest in all departments and the medical service will be the best. In the case of Cook county alternative courses are open. It is self-evident that hospital accommodations for recent, hopeful, and often acutely violent, cases, with the necessarily large number of attendants, both medical and lay, and all the modern paraphernalia needed in such institutions, are more expensive in every way than the quarters

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and attendance required by the strictly chronic class. In Illinois any county is actually required to make provision only for its chronic insane over and above its quota allowance in the state hospitals. By the large liberality of this state these hospitals are open to every citizen free of expense except for necessary clothing, which, in the case of paupers, is charged back to their respective counties. The general expense is met by state taxation, to which it is needless to point out the county of Cook contributes its full share, and is consequently entitled to its proper proportion of benefits. The heads of these institutions of the state are always glad to make room for hopeful and recent cases. By the transfer of the chronic insane to county asylums this can always, at least in this county, be accomplished.

Under this arrangement pauper cases can be supported by the county during the first years of their malady for the nominal cost of their clothing plus the transportation to the state hospital. Patients whose estates or friends are able to meet such expenses, of course do not become a county charge at all. In addition these cases would be afforded the very best opportunity for recovery and return to active life and self-helpfulness.

On the other hand, where recent cases are committed directly to the county asylum they must be provided, not with clothing alone, but with medical and general attendance, food, shelter and every hospital and expensive accommodation their treatment demands, entailing a large outlay which is already elsewhere provided by state taxation. This course requires, too, in building, a form of construction much more elaborate and costly than is needed by the chronic class of the insane.

It is, therefore, the opinion of your committee that, from a strictly financial point of view, the present tendency to manage the asylum on hospital lines is not judicious, and results in a large and quite unnecessary tax upon the county without proportionate benefit to the inmates or gain in the direction of cures.

We note that at present the number of employees actually in care of the patients is equal to or above the proportion in state hospitals. There are twenty-one attendants on night duty, or about one to every fifty patients. This service is accomplished in state institutions by not more than one to two hundred, and we think the night corps might with propriety be reconstructed.

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III. Employment.

In the care of the insane, and particularly of the chronic insane, employment is an item of the utmost importance from hygienic, economic and curative standpoints. Of late years this problem has been given great attention by the utmost advanced minds in this line of work, and now various industries, occupations and lines of activity are furnished this defective class with the best results to them mentally and physically. The enforced idleness of the insane is one of the greatest drawbacks to their improvement. Incidentally, moreover, there is no doubt that these public charges can in some considerable degree contribute to their own support by properly arranged and medically supervised occupation. The population of the asylum at Dunning numbers craftsmen probably of every trade and represents every avocation. There is no good reason why all tinware, brushes, brooms, mats, rugs, carpets, clothing, shoes, caps, and some of the furniture may not be made in the institution at a great saving. But it is in the tilling of the land that the greatest amount of now wasted energy can be utilized, and particularly in gardening, which practically is abandoned at present. A proposition is being considered, we are informed, to turn the entire two hundred and ninety acres pertaining to the county institutions into a park and to give up all attempts at farming and gardening. Your committee would emphatically deprecate such a change. Sufficient ground about the buildings, say twenty or thirty acres, should be elaborately parked and maintained in the best order, giving employment to many in the care of lawns, flower-gardens, shrubbery and paths, but to do away with farm and garden impresses us as absolutely ill-advised.

In speaking of employment for the insane, it is always to be kept in mind that drudgery is not implied, should never be allowed, and that the pecuniary gain is an entirely secondary consideration. For these persons the proper use of the farm necessitates that it should be under the control of the medical superintendent and not in the hands of an independent manager who is not and can not be expected to be in accord with the employment purposes to which it should be put. It is confidently believed that all the vegetables needed in the asylum and infirmary could thus be produced and possibly enough for

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all the county institutions. At Elgin, with about one-half the number of patients, as shown by their biennial reports, from eight to ten thousand dollars' worth of farm and garden produce is yearly obtained from the land, mainly by the work of the patients. In this way greater variety and wholesomeness can be given the dietary, and the excess of meat which marks the present system here as elsewhere, corrected. With similar aims we would advocate the establishment of a workshop under artisan attendants and in every way the development of industry among the insane.

IV. Buildings.

The overcrowding which has for years crippled the asylum is about to be relieved by the completion of four handsome cottages accommodating about forty patients each, and the proposed erection of six more on the same plans during the coming year. The cottages now erected impress your committee as entirely too elaborate and costly for the purpose in view. As a matter of fact only quiet, comparatively trusty patients can be allotted to these buildings. It seems of doubtful propriety to put chronic pauper insane in cottages that would be a pride to Bloomingdale, not to mention the many disadvantages in the management of patients in this form of construction. It is planned to carry food to some of the cottages in heated carts and have the inmates of others go quite a distance to the main building for their meals through all sorts of weather and in winter necessarily through the dark at supper time. In these cottages the patients will practically be turned over to the attendants' uncontrolled care without the instant reach and the constant supervision of medical attention.

When a building for the insane passes a certain limit, say accommodations for twenty patients, the designation "cottage" is a misnomer, and the home-like features which are so much dwelt upon in some quarters become impossible of realization. There can be nothing home-like, or cottage-like, in a dormitory or dining-room or day-room that accommodates forty to one hundred men or women, and when the number reaches forty it can with equal propriety go to the hundred.

Your committee would recommend in future construction the surrender of the small cottage plan. Buildings to accommodate

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one hundred and fifty patients, in each of which a physician should be domiciled, and this is most essential, could be erected at a much less per capita cost, more easily managed, and by a system of associated dormitories and dining-rooms the best results secured at a minimum of expense. By locating such dining-rooms in close connection with the main kitchen, and connecting them by light covered footways with the various detached buildings, many present disadvantages could be overcome. In hotel management it is found most practicable to have common dining-rooms near the kitchen and to have the guests assemble there rather than to distribute the food and service to many points, and the same idea applies among this class of insane. By proper division, moreover, of the dining-hall as strict classification can be maintained as any one can possibly exact, or as can be obtained in the scattered rooms now used so generally. Such an arrangement would improve the dietary, reduce the force needed to handle it, and secure its being served in the best possible condition.

V. Immediate Wants.

The two pressing immediate requirements are for more room, which is to be met very shortly by the cottages above mentioned, and a reliable water supply. The water at present is furnished by an artesian well, and is of a fair quality, but insufficient and somewhat fluctuating. It has been proposed to tap the city mains and get water from that source. If an adequate independent supply is not to be had this arrangement would seem to be a fairly good one.

VI. Detention Hospital.

Every week during the year from fifteen to twenty cases of insanity are disposed of by the Cook County Court. Pending or subsequent to trial the majority of these unfortunate and non-criminal people are placed, merely for custodial care, in the insane department of the county jail, which has been dignified by the title of detention hospital. The need for a reception hospital in the city of Chicago that should be worthy the name is great and urgent. To allow such a place to be a jail department, or to be in any way associated with criminality, is in the highest degree undesirable and unquestionably wrong. Such unpleasant associa-

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tion inflicts needless pain on the afflicted relatives and friends of the insane, and serves to perpetuate the old-time classification of lunatics with criminals. Often it gives rise to delusions of persecutions, of criminal charges and ideas of the most unpleasant sort in the minds of the unfortunates there detained which very many times must have simply served to irretrievably overturn their tottering intellects. It is certain that in many instances it has intensified their suffering and retarded their recovery very materially. A building for this purpose could very suitably be erected on the grounds belonging to the county hospital, and placed, if need be, under the administration of that institution.

It may not be amiss to state that the enforced public jury trial to which every insane person is, in this state, subjected before he can be deprived of his liberty and consigned to a hospital where his mental malady may receive suitable care and treatment, works great hardship and injury in many cases, just as does the jail feature of the present detention hospital. Moreover, it often leads to the postponement of legal proceedings on the part of friends and relatives until the golden chance for recovery is passed. In the case of puerperal insanity and the insanity of the various sexual epochs this publicity is a bitter and unnecessary cruelty, and practically furnishes but slight safeguards in a large community against the alleged opportunities for persecution it was planned to obviate. It is hoped a more humane law may eventually be enacted.

VII. Infirmary.

Your committee found the County Infirmary over-crowded to an alarming extent with over thirteen hundred inmates in quarters that would ill accommodate eight hundred. What it must be later on when, in the winter months, the population, judging from past years, may be expected to reach seventeen hundred, the imagination fails to depict. Everywhere is a marked lack of ventilation, and wards now not furnishing over two hundred cubic feet of air-space per patient are filled with the phthisical, the syphilitic and the demented. The malodor is frequently almost overpowering. The bathing and closet facilities are totally inadequate to meet the most ordinary wants. No suitable provision for escape in case of fire is provided, and

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the radiate arrangement of the building is such that a centrally located blaze would coop up the entire decrepit population and they would simply be left to roast. A more thoroughly planned fire-trap could not be imagined. Here as at the asylum the engineer is an independent functionary and the farmer sustains similar relations to the executive head. There is an equal lack of water and the same demand for an immediate better supply. At the time of our visit it was impossible to flush the plumbing on the upper floors, and at times this condition is general all over the building for days. Additional room should be at once provided, and if other pavillions are added to the present structure on the same plan, they should be equipped for, and given up to hospital purposes and the numerous hospital wards now scattered throughout the institution localized therein. More attendants should be provided. Excepting in the hospital wards affairs are directed by some more or less reliable inmate, to whom clothing, medicines, food, and many articles must be entrusted, and yet such "ward bosses," as they are called, are entirely irresponsible and can not be held otherwise. This results in a wastefulness that if corrected would pay perhaps the extra expense for attendants who could be held to a proper accountability.

Probably four out of every five of the inmates of the infirmary are capable of doing some form of work. Aside from the necessary housework and a little puttering on the farm, no occupation whatever is furnished this army of public boarders, and it becomes small wonder that this place is a popular winter resort. It appears to your committee that this is all wrong and an imposition on the frugal tax-payer. Not only should occupation be furnished these county charges, but they should be compelled to work every day and as far as possible to become self-supporting. To maintain idleness is no charity, and very poor public policy. In this connection we may again advert to the proper use of the land and the advisability of centralizing the administration of these charities in a single office.

VIII. Conclusion.

If your committee were disposed to be minutely critical many items might be pointed out in each institution that possibly could

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be improved, but considering the nature of the buildings, the frightful overcrowding, the division of authoritative responsibility, the uncertain tenure of office and the lack of thorough discipline which seems now unavoidable, we wish to heartily commend the incumbent superintendents for securing the degree of cleanliness, good order and good government now in force. We would very earnestly urge the Board of County Commissioners to centralize the control in the administration of these institutions and preferably to unite them as above indicated. By so doing the heads of departments can be reasonably held to a rigid accountability.

Signed— ARCHIBALD CHURCH,
ELBERT WING,
SANGER BROWN,
HAROLD N. MOYER.

THE CHICAGO MEDICAL SOCIETY.

Regular meeting March 2d, 1891.

Dr. FRANK BILLINGS, President, in the chair. In the absence of the Secretary, Dr. Liston H. Montgomery was appointed *pro tem.* to that office. Drs. Ignatz Lange, M. M. Leahy and J. F. Oaks were elected to membership.

Dr. ARCHIBALD CHURCH read a paper entitled "Morvan's Disease, with the clinical report of a case," (see page 102). In its discussion

Dr. HAROLD N. MOYER said: Mr. President, I rise to express my thanks to Dr. Church for his paper. It seems to me he has presented a very perfect picture of this rare disease, and one that does him the more credit in the fact that, as he says, it is the first one in the English language. I think that is true. He has, however, done such justice to the literature of the subject, and his particular case, that I think there remains but little to add to what he has said.

One interesting point is the relation of the condition of syringomyelia to this disease of Morvan's; I perceive by the Doctor's paper that he is perhaps not confident himself as to whether the conditions are identical or not. It is true that Morvan did claim persistently that the disease should be differentiated by the system Dr. Church has so well described, the condi-

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tion of the tactile and thermic sensibilities, and in the description of five cases, three of the more typical sort being published in 1883, and as late as 1889 Morvan insisted upon the differentiation between Morvan's disease and syringomyelia. Within the last two or three months there has appeared a paper which seems to have escaped the attention of Dr. Church. I do not reccollect the name of the author, but an autopsy has been made upon a typical case of Morvan's disease, which presented peculiarities claimed by Morvan to be pathognomonic, and in this case the peculiar changes of syringomyelia were also present, that is the enlargement of the central canal of the cord, an enlargement which involves the upper portion of the cord, especially the gray matter. So as the matter stands now in regard to the pathology of this affection I should lean to the view that syringomyelia and Morvan's disease are the same.

Dr. E. FLETCHER INGALS and Dr. JOHN EDWIN RHODES presented a paper on "The Shurly-Gibbes Treatment of Pulmonary Tuberculosis." (See page 115.)

Dr. CHRISTIAN FENGER in opening the discussion said: Mr. President, I have been very much interested in seeing these beautiful instruments and hearing the detailed description of this new method. As to what Dr. Ingals has said in regard to the details of this treatment and its effects on his patients, I have nothing to say, but I wish to say a few words on this method in general.

I think this is the first time that this matter has been brought before the Chicago Medical Society, but the subject was first introduced to the public through the medium of the daily press by reports, if not given, at least authorized by Drs. Shurly and Gibbes. A few weeks later I received an invitation to a reception given in honor of these gentlemen, which I did not accept. Thereupon I read the lectures delivered by these two gentlemen at the Post-Graduate Medical School, January 23, 1891, published in the *Journal of the American Medical Association* February 21, 1891, which as far as I know is all that has been given to the medical profession through the medical press.

Dr. Gibbes' article pretends to give the pathology of phthisis pulmonalis, and Dr. Shurly described the new treatment. The pathology as given by Dr. Gibbes, and on which the method of

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treatment is founded, is, from beginning to end, through and through, utterly false. He asserts that consumption, or phthisis, as he calls it, in all its forms, acute as well as chronic, lobular and cheesy pneumonia as well as acute miliary tuberculosis, divide themselves into two kinds: the one inflammatory, whatever that may mean, the other characterized by what he calls a new growth in the lungs, caused by the bacillus tuberculosis.

Such an assertion would revolutionize our knowledge to-day from all other sources about pulmonary phthisis. In Koch's original article of 1884, all the twenty-nine cases of pulmonary phthisis that were examined were without exception tuberculous; that is, the bacillus tuberculosis was present in all.

Inoculation experiments with pulmonary tissue from all forms of pulmonary phthisis, and sputum from phthisical patients, in some of which material it was sometimes difficult to find isolated bacilli, proved in the sixty-six experiments invariably effective; that is, all the animals were infected with typical tuberculosis. In the cheesy material—that is, the territories of coagulation necrosis from phthisical lungs, the bacilli had often disappeared, but the spores of the tubercle bacilli must have been there, because when implanted in the anterior chamber of the eye or the peritoneal cavity of guinea pigs and rabbits it invariably produced tuberculosis with an abundance of tubercle bacilli.

The article further stated that the authors had made some experiments on animals with chloride of gold and sodium, and iodine, which made these animals immune against the inoculation of the bacillus tuberculosis. This is another fact of enormous value, and is surprising because it gives us for the first time a purely inorganic substance which produces in animals an effect of this kind; namely, immunity. I think, however, that we should require detailed statements regarding these experiments on animals, which should be of the same scientific character and authenticity as the reports from the great laboratories in Europe and America. In experiments of this kind I should require full details before I could feel at liberty to accept such doctrines as facts.

The history of medicine shows that as far as remedies are concerned, most of the remedies that belong to inorganic chemistry have been tried in vain for the cure or prevention of nearly all

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the diseases known to mankind. The organic remedies, of which new ones spring up every day, may be said to be still on trial, but so far have shared the fate of their inorganic brethren.

The remedies that in my opinion might be looked upon as having a future and as deserving a trial in the prevention or cure of microbic diseases, through the creation of immunity, or with a view of destroying the microbes already in the tissues of the organism, are the remedies derived from bacteriology itself.

Jenner's vaccination for small-pox was the first step in this new field in modern times. Pasteur's prevention of anthrax in animals, in 1880, was the next step in creating immunity against microbic diseases. The first step in the cure of microbic disease was made by Pasteur in hydrophobia. This has now been followed by Koch's discovery in tuberculosis. All of these remedies belong to the same class; that is, they are derivatives from, or products of, the diseased tissues or pathogenic germs causing these diseases.

I consequently cannot agree at all with Dr. Ingals when he states that the method of Drs. Shurly and Gibbes is scientific; nothing is known of the experiments on which it is based. I am not aware that they have been published in detail.

I cannot see that these remedies are anything more than the common remedies we have in inorganic chemistry. In times gone by similar remedies have been tried by inhalation and internally. Dr. Ingals states that these remedies do no harm. It may not do any harm to try them, and they might be tried, but not with any more expectation of success than from the use of any other of the older internal remedies and inhalations.

I protest against a remark made in Dr. Shurly's lecture in this city. He says, "We are certainly very much obliged to the profession of Chicago for the attention that has been shown us." Every new remedy attracts attention and may be tried; if it does not rest upon a scientific basis, the trial must be simply empirical.

I wish to enter my earnest protest against any, even an apparent endorsement by the Chicago Medical Society of this method at this stage.

Dr HOMER M. THOMAS. Mr. President: In common with all the members of the medical profession of our city, I have felt a great deal of interest in the work and researches of Drs. Shurly

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and Gibbes in their efforts to find a cure, or even a palliative measure, in the treatment of pulmonary tuberculosis. My interest in this matter led me to go to Detroit and personally inspect the methods used there in the treatment of this disease, and the visit was fruitful in convincing me of the professional honesty of the gentlemen in question, and also of the true scientific spirit which pervaded their work. They seem to have announced this method of treatment rather prematurely on account of the journalistic enterprise of some of the Chicago newspapers, but notwithstanding that, there is, as far as I am able to judge, a very substantial strata of deep, scientific, and hard persistent work upon which to base their conclusions. Having witnessed the Shurly-Gibbes treatment at the Harper Hospital and noted from the records, the very gratifying results obtained in many cases; having seen the guinea pigs and monkeys that have been inoculated with the solutions of iodine and gold, I returned home and arranged to give the treatment a thorough trial. I have now been using it for some two months, and am free to say that in some cases the results secured are better than any which could reasonably be expected from the older methods of treatment. I will not detain you by any lengthy history, but I have in mind one particular case that seems to bear out these conclusions. A young gentleman consulted me who had tuberculosis of the right lung extending to the upper border of the second rib. The sputa contained innumerable bacilli and physical examination of the lung showed signs of consolidation and caseation; night sweats had begun, with profuse expectoration, loss of appetite and high fever. The conditions surrounding the patient were such as to permit of a very thorough trial of this treatment, hence a room in his home, about three by nine feet, was fitted up, where a typical Shurly treatment could be administered.

The first step in the treatment was to fill the air of the room with steam vapor, and into this was sprayed a two ounce solution of saturated salt water; succeeding this, chlorine gas was generated, by adding dilute sulphuric acid to the black oxide of manganese, and chloride of sodium. The patient enters this room, first sprays the solution of salt into the air, then generates the chlorine gas, which he breathes to the point of easy tolerance. The inhalations are taken three or four times a day, from ten to

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twenty minutes at a sitting. There is evident relief from the cough, breathing is easier after each inhalation, and the feeling of oppression in the chest is markedly relieved. Coincident with the inhalations, there has been used hypodermically, solutions of iodine and gold. The preparation used consists of from seven to ten minims of a chemically pure iodine solution representing one-twelfth of a grain used hypodermically every three days; on the fourth day a solution of gold, five minims representing one-thirtieth of a grain is used. The internal medication has consisted of one drachm of dilute phosphoric acid a day, and also of six capsules of morruhol and beech wood creasote a day, each capsule containing morruhol minims three, and creasote minims one. In addition to this I have had the patient placed before a hot wood fire every night and thoroughly rubbed over with pure lard to assist the action of the skin. The result of all these measures since beginning this actual medication is that there has been no rise in temperature, the pulse rate is nearly normal; the patient sleeps well, eats well, and has gained two pounds in flesh. While this case should, by no means, be considered cured, there is an alleviation of the marked symptoms which were prominent and which preceded the use of the treatment, that renders its continuance very encouraging. It appears to me that, as broad-minded physicians, no matter how much we may differ in our views as to the pathology of tuberculosis, we should willingly admit that system of treatment is good which does good. From my experience with this treatment, it would seem to be worthy of a very extended trial.

Dr. ROBERT BABCOCK. Mr. President: The remarks of Dr. Ingals and the reports of Drs. Rhodes and Thomas are very interesting to me, as I have been giving the treatment a trial at the Post-Graduate Medical School in connection with my dispensary practice. Although endeavoring to give it a thorough trial, I am not prepared to state any results, since the treatment has only been on trial for the last three or four weeks. Dispensary patients are notoriously bad ones on which to try it and many of mine were advanced cases. A few have declared themselves benefited, but I have attached no particular importance to their statements, as we know that consumptives are cheered by every new treatment, and frequently declare themselves benefited when they are placed

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upon any treatment to which they are not accustomed. I am not disposed to discuss the scientific aspect of the question. I am a pessimist, I believe that we have not yet discovered any specific in the treatment of pulmonary phthisis, but I regard this as one of the measures which should be tried by itself if we wish to test its merits. The rationale of the treatment has not been fully stated this evening, and that the members may understand a little more clearly Dr. Shurly's position with reference to it, I will state what he told me in reference to the chlorine gas inhalations. He desires to administer gas in sufficient doses to produce a restraining or destructive effect upon the bacilli. And as chlorine gas, according to his statement, in the strength of one to three thousand will check their growth, he desires to increase the dose until the patient can inhale it in that strength. The patients inhale the gas only two or three times a day at most and in many cases only once or twice a day, and but for a few minutes, they inhale an atmosphere which is charged with a warm vapor and I cannot escape the conviction that much of the benefit to the cough, its being rendered easier and softer, is due to the effect of steam rather than to the effect of chlorine gas. The effect of the iodine and chloride of gold and sodium solutions is, according to Dr. Shurly, not to destroy the bacilli, but to destroy the influence upon the system of certain products which may be generated by the bacilli which he classes as toxalbumens, or ptomaines, or leucomaines, or whatever the proper term is. The patients receive the chloride of gold and sodium solution in increasing doses, as has been stated, but Dr. Shurly says there seems to come a time in many cases when they no longer manifest the effects of the chloride of gold and sodium, and then a few doses of iodine seem to bring out the effect of the chloride of gold and sodium, and a return to that in former doses will manifest the effect. According to Dr. Shurly's suggestion, we administered the chlorine gas in an exceedingly easy fashion. We turned on the steam from our pipes through a saturated solution of chloride of sodium, while on a shelf below is the chlorinated lime from which the chlorine gas is liberated. Such a number of grains of chloride of lime is used as will liberate the gas in the strength of one to twenty thousand, or any strength the patient can bear up to one to three thousand. The case Dr. Thomas has reported is gra.i-

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fying, but as physicians disposed to weigh this matter candidly, we must say that in this case it is doubtful whether it is Dr. Shurly's treatment or the other treatment that has produced the beneficial effect. We know many cases will be improved by cod liver oil and creasote, and to-day the administration of creasote in oil hypodermically is one of the most effective remedies we have. Therefore, if Dr. Shurly's treatment is to be given a fair trial, it should be employed to the exclusion of every other, as is being done in those cases of my dispensary patients in which it is being used.

Dr. J. B. MURPHY. Mr. President: I would like to ask the members who have reported these cases, if they know how many of them had bacilli and how many did not, and if in treating them they classified them into cases in which they found tuberculosis and into cases of catarrhal affection of the lungs. In the reports at the American Climatological Society Meeting at Denver, 1890, the members from the western part of the United States made no such classification. I think all of the older members of the profession who have treated cases with pulmonary symptoms, with rales and some consolidation, have found that one class of cases will improve, and another will not, and they do not know why. In the cases of tuberculosis that have come under my observation, and I think also that of Dr. Lee, since 1884, when we began to examine for bacilli, I doubt if we have had a single case of tuberculosis in which bacilli were present that we can call recovered. A number of cases in which the bacilli were present I sent West; a number of them improved and many of them did not improve. I remember the first case in which I discovered bacilli, that I sent West; it was in June, 1884, and the case did not improve, but progressively lost until he died. The man had no cough up to three days preceding a hemorrhage, the bacilli were discovered seventeen days after the hemorrhage. That man was sent to Colorado Springs where he remained until he died thirteen months later. In many cases of catarrhal trouble, with a temperature of 103°, large quantities of expectoration, night sweats, etc., and if we put them on cod liver oil, the temperature will drop and the patient gain from ten to twenty pounds in four weeks, but I never saw a case of tuberculosis gain that many pounds in that time. I hope Dr. Lee will

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report a case which he has had where bacilli were present and which shows what benefit you can get from cod liver oil treatment where the extent of invasion is small.

As to the effect of chlorine gas in killing the bacilli; we have used in surgery all forms of cauterization for the purpose of destroying this tubercular tissue, for the purpose of destroying the bacilli therein; all failed to accomplish the purpose. All you can expect from the chlorine gas if it is to kill the germs by coming in contact with them is to kill those on the surface, but we find them imbedded in the tissues, we find them in the giant cells and in the cicatricial tissues that are taking place in the process of repair. How does the chlorine gas reach the bacilli in these positions? It certainly does not permeate the tissue; if it acts at all it must be through the blood, and acting through the blood does it reach a strength of one to three thousand which is necessary for the killing of the bacilli?

Dr. J. J. M. Angear. Mr. President: I suppose that we have about come to the conclusion that the bacilli are really the cause of consumption. Then the question naturally arises how is it that there are so few persons comparatively that die of consumption, and so many that escape? The question thus put will receive the answer that there is a difference, in the natural constitutional resistance against this disease, or these germs. If we have a person who, by hereditary influence, is not able to resist the bacilli, then when we kill every one of the bacilli we have not cured our patient, because just as soon as that patient comes in contact with the bacilli, he is taken down again, so that we shall have to keep on curing our patient unless we can go back and strengthen the natural resistance that every one ought to have against these invaders. Since listening to this paper, I fancy that I hear voices that have hardly died away in this very hall where speakers were going to cure consumption with hot air, and the cases were cured, every case was improved. And while they were being listened to, I heard the voices of these same persons, not more than two years ago, talking of injecting gas into the rectum and every case was cured by this means also. And we have heard of this, that, and the other thing being done and the patients are always made better if not cured by it, and yet we have consumption, and I am afraid we are always going to have

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it until we can get back of all of this treatment which simply aims at killing the bacilli. We must strengthen the resistance that every person should have against the bacilli, and when we can do that, the patient will be able to breathe the infected air with impunity the same as any of us who are not consumptive. We have been in contact with consumptive breath, with bacillus, with all these deleterious things, and here we are with good solid lungs, while some of our neighbors who have not been exposed to one-tenth the influences we have, are in their graves, simply because they did not have that resistance in their composition when they were born as we had, and the result is they were victimized as the poor rabbit is by the wolf. And before there will be a particle of hope of curing consumption we must in some way strengthen their resistance, and when the bacilli are killed, they will stay killed, and our patients will be cured, and not before then.

Dr. J. M. Patton. Mr. President: I think Dr. Murphy made a good point when he asked for the proper distinction of these cases through the examination of the sputa, or a physical examination, or any means by which to properly classify them. I think the cases the doctor reports are very vague; it is not clearly shown either through a physical examination or examination of the sputum, in just what catalogue the patients should be placed, therefore I think the reports are good for very little. It is very early to form a judgment on this or any other treatment. From a clinical standpoint I have been interested in this treatment and have given it some trial. Any physician treating this class of cases has them thrust upon him and has to do something for them; they are not in a position to use the much vaunted lymph; indeed the reports from this country and Europe are that it is not only dangerous but almost certain death in advanced cases of phthisis to use the lymph, and therefore we must use something else. I do not think it is detrimental to any man's scientific ability to try to relieve his cases with this or any other method. I have had some success with this treatment; I recall one case of fibroid induration of the lung and pleura, following a neglected pleuritic effusion; there was high temperature, night sweats, rapid pulse, loss of flesh and considerable expectoration; and in this case the injection of iodine brought the temperature from 102 to 99°, brought

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the pulse down, the night sweats stopped, the appetite increased, the expectoration lessened and there were no paroxysms of cough. I have obtained the same results from creosote and various essential oils, especially when given in such a manner as to reach the intestines and not be absorbed by the stomach (as by keratine capsules). I think we can perhaps obtain just as good results from creosote and the essential oils given in capsules so as to be carried through the stomach without absorption, as we can by this method. But the advantage of this method is that we know just how much our patient is going to get; you know when you inject one-sixth of a grain he will get one-sixth of a grain and that it will not be carried off by the bowels. To those men who are obliged to take care of cases of phthisis I would recommend this method as a fortunate relief. I am skeptical about the cure, but it will relieve your patients. You will hold them longer and they will be benefited by the treatment.

Dr. A. GOLDSPOHN. Mr. President: I wish the gentleman who claimed to have witnessed the experiments of Drs. Shurly and Gibbes would state in detail what he knows about them. The most essential point stated to-night was mentioned by Dr. Fenger, viz: that the gentlemen have declared that it is not a tubercular bacillus that causes consumption in every case. As Dr. Fenger says, that is an immense assertion and they have the burden of proof to bring; they certainly have not brought it. They also claim that animals are rendered immune by it, but they must report in detail very many instances before we can accept their opinion as to that. I feel like asserting that if these gentlemen had passed through a school such as Koch has in Berlin, and learned his methods, learned to come to a conclusion slowly upon safe and certain premises, they would not say any such thing, and the fact that they have declared this, practically puts them under very great suspicion of inaccuracy, of not being scientific. I challenge these gentlemen who are most in favor of this method to give us the details. What have they of scientific investigation to put forth as a foothold? It is a very easy matter to say that cases are cured, but many things will improve consumption and it is very hard to say what did it, whether it is the hot air, the vapor, the proper care that they get incidentally with this treatment, or any specific thing. It is very difficult to come

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to a conclusion in regard to the effect of a thing in a clinical way. Certainly very many cases must be observed under the same conditions; they must be under close observation from beginning to end, not in dispensaries nor in out-door practice, but in some place where they can be carefully scrutinized, and that is very difficult to get. The bacillus is the cause of consumption. No one has brought any evidence to the contrary that will stand. Then investigate, make laboratory experiments upon that bacillus, find out in what strength the liquids will have any influence upon it, and then make experiments upon animals and see whether they will bear out these experiments, before we come to man. If we find the laboratory experiments borne out in man, then we have something to stand on, but we cannot simply by observations of cases that are under all possible influences, try to draw certain conclusions.

Dr. W. E. Casselberry. Mr. President: I rise to make an inquiry; knowing that the readers of these papers would be likely to observe any laryngeal trouble in their cases, I would inquire if in any of the cases that have shown signs of improvement there was laryngeal tuberculosis as a complication, and if so, what the effect of the treatment was on this complication? As laryngeal tuberculosis is a form of the disease that is exposed to view the effects of the treatment upon it could be watched and it would serve as more or less of an index as to the general effects of the treatment. I recall, in this connection, that either Dr. Shurly or Dr. Gibbes somewhere speaks of a case of laryngeal tuberculosis as a complication of pulmonary tuberculosis where cicatricial repair rapidly ensued. Being somewhat skeptical regarding any extraordinary effect of this treatment I feel disposed to question the accuracy of this observation, either of the diagnosis or the result, and therefore I make the inquiry. I would also say that although I have had no personal experience with this system of treatment, I recall certain data with regard to the general therapeutics and physiological action of the several remedies employed, and it occurs to me that the only novelty in the treatment is in the combination and more effective method of applying the remedies. We know that cod liver oil has long been reputed to be valuable in this disease, and cod liver oil is more potent than other oil because of the iodine, bromine, chlorine and phosphorus, which, in

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addition to biliary constituents, are contained in it in small quantities. We know that iodine has long been reputed to be an alterative, having the power to alter certain morbid conditions incidental to "scrofulosis" and tuberculosis, now believed to be identical processes in most instances, and we know further that chloride of gold and sodium is a general stimulant to nearly all the functions of the body. It stimulates the excretory organs and the brain, augments digestive power and promotes constructive metamorphosis, and has been administered successfully for melancholia and depressed mental states, old debilitated cases of syphilis, chronic Bright's disease and functional impotence. Such effects, as well as those of iodine, are doubtless intensified by their hypodermic administration. Further than this, in the vapor of chlorine first modified by sodium chloride, we should expect antiseptic qualities, and that the inhalation of this vapor would serve as a local stimulant and astringent to the bronchial mucus membrane. In tuberculosis there is always more or less accompanying bronchitis, with rise of temperature, which is frequently due to purulent matter in the bronchial tubes and in accessible pulmonary cavities, and the inhalation of this vapor would be expected to relieve the bronchial trouble, clean out the bronchial tubes and so ameliorate the cough and general course of the disease, at the same time lowering temperature. I do not expect any better results from this treatment than would naturally ensue from the application of these therapeutic principles somewhat intensified by the combination of remedies and more effective method of administration.

Dr. E. Fletcher Ingals, in closing the discussion, said: Mr. President, I would like to state with reference to the object of this paper that I have not tried to prove that Drs. Shurly and Gibbes have done a great thing for the world, for even they do not claim anything of the sort. I do not think a great deal has been accomplished, but I think the treatment worth trying, and certain cases will be benefited by it. In what Drs. Shurly and Gibbes said when they were here there was no description of the treatment and I have not seen any in print. I have therefore endeavored to describe the method so fully that physicians may try it if they wish. I believe that it is well worth a trial.

Professor Fenger objects to the statements made by Drs.

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Shurly and Gibbes, that these injections have rendered animals immune to tuberculosis; stating that there have not been sufficiently detailed statements of their experiments. I am not well acquainted with Professor Gibbes, but I know Dr. Shurly well, and I assure you he is a man whose veracity cannot be questioned. He told me something of the experiments that Drs. Fenger and Goldspohn wished to know more about, but I regret that I cannot tell just how many experiments have been made. In demonstrating what he believed to be the inaccuracy of those who believe that the bacillus tuberculosis is the cause of consumption, Professor Gibbes spoke of having made a thousand mountings from one lung, therefore we may conclude that he has been careful in other experiments. Only one sentence gives me any idea of the number of guinea pigs used in these experiments. I heard some one asking Dr. Shurly about making a certain experiment on guinea pigs and he replied "That it would require fifty-six pigs and several weeks to do it." If each of these experiments has required fifty-six pigs they have certainly not based their conclusions on guesses. This much I know with reference to their experiments on animals; guinea pigs or monkeys have been inoculated with tubercular material, either by injection, or by inhalation of dried tubercular sputum. Half of these animals were given the chloride of gold and soda or iodine, and the other half left without treatment, all other conditions being the same. In an average of about three weeks the animals that were not treated all died, and this has been the case over and over again, whereas the animals that received the injections of gold and soda, or iodine, lived on and were perfectly well at the end of several months; and those that were killed showed no evidence of tuberculosis. These experiments, it seems to me, are scientific, and I think the objection not well taken. It was urged by one speaker that there is nothing novel in the remedies employed. No novelty is claimed; however, we cannot forget that the hypodermic use of a remedy sometimes produces a very different result from its administration in other ways. Various animal poisons, or Koch's lymph, taken into the stomach cause no injury whatever; but if a small portion enters the blood current profound impressions speedily result. The assertion that it is useless to inject iodine under the skin to destroy certain poisons

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is, I think, a mistake, as was shown many years ago by Professor Brainard's numerous experiments with the venom of serpents. He caused these to bite pigeons and other small animals and then injected into the wounds certain inorganic agents with antidotal effect; he could thus prevent death almost uniformly by certain drugs, of which iodine was the most important.

Professors Shurly and Gibbes believe that it is not the bacillus but certain ptomains, or animal poisons, that causes this disease, and if they are right iodine, as shown by the experiments just mentioned, is just the remedy required. Professor Fenger very properly asks for more detailed statements and I have no doubt they will be given eventually; but if he were as well acquainted with Professor Shurly as I am, he would not for a moment question any of the statements he has made. Dr. Fenger's objection to Dr. Shurly thanking the physicians here for their courtesy I think is not well taken, for Dr. Shurly in no way intimates that it was an indorsement of his theory. He thought the physicians here treated him courteously and he quite properly thanked them for it.

In the discussion one of the gentlemen said the inhalations were given with steam and that perhaps it was the beneficial agent.

The inhalations are sometimes given with steam, but usually the spray is formed by compressed air. In answer to Dr. Murphy's question, I may say that the cases reported to-night have not been classified by microscopic examination. In some of them bacilli have been found, in others they have not been looked for. In some cases where bacilli have been found the patients have been greatly benefited. The remark was made that there was no statement in the report as to the nature of the cases. I think the doctor misunderstood the paper. In these cases the symptoms and physical signs have been recorded with such precision that there can be no question as to the diagnosis. When localized dullness and subcrepitant rales are found at the apex of the lung together with night sweats, emaciation, rapid pulse, hectic, and a history of hæmoptysis it is of little importance whether we find bacilli or not; for such symptoms and signs are not present in simple catarrhal inflamation once in a hundred times.

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Dr. Angear referred to voices echoing in his ears that had spoken of cures, *always cures*, from various other remedies. This is all right, but mine was not one of those voices and I do not claim that all of these cases were cured. Out of nearly fifty cases I would not pretend to say that more than three have yet been cured, and it is certainly not extravagant to claim a cure of six per cent., in a disease where probably twenty-five per cent. of all cases eventually get well.

Dr. Patton seconds my remarks in asking that the treatment be given a trial. Anything that will prolong the life of one of these patients is worthy a trial, and I fully agree with Dr. Patton that it is not unscientific to try these things even if we have not begun at the bottom and found the origin of the disease.

As to laryngeal complications, I will state that a number of these have had laryngeal tuberculosis, but I have not seen the laryngeal ulcers distinctly cured by this method. In one of the cases that has greatly improved there was much swelling and soreness but no ulcers; but the pulmonary signs were such that no one in this hall could have doubted the diagnosis. In another of the cases reported, but not certainly tubercular, there was a great deal of laryngeal thickening which had been present for a long time, and the patient suffered from a terrible cough which had resisted all other forms of treatment for months. He was cured in a few weeks.

I suggested to Dr. Rhodes to report only a few typical cases which had been benefited by this treatment, merely to encourage the profession to try the method and not as an effort to prove that it is all that we could wish.

Dr. W. T. THACKERAY announced that at the annual meeting in April, he would move that two hundred dollars be paid the secretary, one hundred dollars the treasurer, and fifty dollars the Grand Pacific Hotel.

Upon motion the Society adjourned.

LISTON H. MONTGOMERY, *Sec'y pro tem.*

Regular meeting March 16th, 1891.

Dr. FRANK BILLINGS, President, in the chair. After approval of the minutes of the previous meeting, Drs. D. J. Doherty,

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Charles F. Bowen and Derexia Morey Errant were elected members.

A paper entitled "Topical Treatment of Diphtheria" was read by Dr. B. M. BEHRENS (see page 132).

Dr. CASEY A. WOOD reported a case of "Removal of a piece of steel from the vitreous body" and exhibited patient and magnet (see page 128).

Dr. F. C. HOTZ said: Mr. President, In a paper I read before this Society about a year ago, reporting a few cases of extraction of steel by a magnet, I took the position that one of the most important points to settle before undertaking the operation is to get a correct idea of the location of the fragment to be removed, because otherwise the operation is a fishing in the dark, and necessitates the breaking up of the vitreous humor in various directions before you succeed in finding the foreign body and extracting it with the magnet. That we can not in all cases decidedly locate the fragment, is true; and if the case is seen early before destructive inflammation has taken hold of the eye, it may be justifiable to make the attempt at extraction, although we can only guess at the possible location of the fragment; but if two or three probings of the vitreous with the magnet do not produce the metal, we may just as well desist from further attempts.

In the case reported to-night the vitreous was so obscured by blood that the doctor could not see the foreign body, if I understood him correctly; and he located it only by inferring that, entering above, it had rebounded from the fundus and by its weight dropped down to the lower portion of the eye; consequently he made the incision at the lower outer part of the eyeball and first searched the bottom of the vitreous chamber for it; fortunately the foreign body had so dropped down and the result was a successful extraction and the preservation of the eye. But suppose the foreign body had been held in one of those hemorrhagic clots which the doctor saw floating about the vitreous chamber, I doubt very much whether the attempt would have been successful. Or suppose, as I have seen, the foreign body had cut into the choroid and retina and was held half stuck in the sclera, then the attempt would certainly have been unsuccessful. I mention this simply to call attention to the difficulties and uncertainties involved in such an operation when we can not see the

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foreign body. But if the operation is done early, before destructive inflammation has attacked the eye, and the foreign body is removed, it is certainly a gratification to the surgeon to have saved an eye by this operation under such difficult circumstances.

Dr. J. Elliott Colburn. Mr. President: I don't know that I have anything to add to the remarks of Dr. Hotz and no criticism of the paper. I have found the magnet an exceedingly useful instrument for this purpose but have used the one devised and manufactured by McIntosh as being an equally convenient form of instrument; the form of battery used, I think, is an improvement. I have never attempted the removal of a foreign body from the eye where I was unable to see it. Fortunately, the cases I have been called upon to treat have come to me early and there was nothing in the way to interfere with my seeing what I was going to remove, and just where to go, so I have not had the experience of successfully removing an unseen body.

Experiments made upon the cadaver lead me to believe that very close approach to the fragment must be made before it will attach itself to the needle. I also found that enveloping the fragment in a thin coat of wax completely insulated it and even contact failed to excite it enough to move it in the vitreous.

A paper entitled "Observations on 'Kochine'" (see page 124), by Dr. L. W. Schmidt, now in Vienna, was read by the President.

Upon motion the Society adjourned.

Liston H. Montgomery, *Sec'y pro tem.*

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Reviews.

Des Resultats Immediats et Eloignes Du Traitment Electrique des Fibromes Uterins par la Methode du Docteur Apostoli. Par Mlle. Felicia Jakubowska. Paris: Octave Doin, 1890. 8vo., pp. 92. (Immediate and remote results of electrical treatment of uterine fibroids by the Apostoli method.)

This thesis inspired and distributed by Dr. Apostoli, in the highest degree laudatory of his method of treatment, is based upon his statistics and cases and is practically his last utterance on the subject. Chapter I. is historical; Chapter II. descriptive of the Apostoli method; III. and IV. physiological and therapeutical effects of the continued current. A bibliographical index is a valuable feature. Nothing essentially new or important is published.

Medical and Surgical Reports of the Cook County Hospital, Chicago, Ill., for the six months ending July 1, 1890. Edited by Louis J. Mitchell, M. D., Registrar. Chicago: J. M. Jones Co., 1890. 8vo., pp. 138.

It is a matter of much congratulation to all concerned that some effort is finally being made to systematically utilize and make public the magnificent material of this hospital, which has hitherto served no scientific purpose aside from the instruction of the house and visiting staff. The present little volume is the first medical report the institution has ever made, and is an earnest of better things to come. A nicely illustrated description of the hospital is followed by the Registrar's tabulated report. The treatment of empyema is discussed by Dr. Bayard Holmes clinically, surgically and at length, and surgical and medical abstracts with interesting cases make up the rest of the report. The portion contributed by Dr. L. Hektoen, pathologist, is very valuable.

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MEMORIAL SKETCHES OF DOCTOR MOSES GUNN. By His WIFE. With extracts from his letters and eulogistic tributes from his colleagues and friends. Chicago: W. T. Keener, 1889. pp. 380. Cloth.

The magnificent professional career of Moses Gunn has been an inspiration to thousands of medical men who have even distantly come within the radius of his personality, and his character has left upon the minds of students who followed his instruction an impress deeper and more lasting than that of any other teacher. This for many reasons. In the book at hand an entirely different side of his nature is unfolded to us, so that to admiration for the surgeon and teacher is added reverence for the man, the father and the husband. The hasty, breezy letters of such a man, not written for the public eye, must always contain a charming interest, while the struggles and elements upon which his success was built can not fail to instruct. Indeed, the book is entertaining in the highest sense of the word. For the student of medicine it is a guide to professional conduct, and all who knew Doctor Gunn will appreciate it for the loving and just tribute it is to the memory of a great man.

News Items.

The death of the well-known optician, HARTNACK, is announced from Potsdam.

Dr. CASSIUS D. WESCOTT has moved his residence to 551 Jackson Boulevard. Telephone 7,368.

Dr. W. W. JAGGARD has removed his office and residence to 2910 Indiana avenue.

Dr. J. C. HOAG, Secretary of the Chicago Medical Society, has returned from his Western tour.

Dr. H. A. WILSON has been appointed Lecturer on Orthopedic Surgery in the Jefferson Medical College, of Philadelphia.

Garfield tea, so-called, is said to be composed chiefly of senna, fennel, marshmallow and couch grass.—*New York Medical Record.*

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The King of Denmark has bestowed the Cross of Knighthood of the Dannebrog Order on Dr. Koch's son-in-law, Professor PFUHL.

PROFESSOR SATTLER, of Prague, has received a "call" to succeed the late Professor Coccius in the chair of Ophthalmology at Leipzig.

The State Board of Health of Minnesota report sixteen cases of leprosy within its jurisdiction. It is entirely among immigrants.

Professor G. Retzius has resigned the chair of Anatomy in the University of Stockholm, and has been succeeded by Dr. A. LINDSTROM.

Dr. ARCHIBALD CHURCH has removed his office and residence to the Pullman Building, Suite 805. Office hours, 9 to 12 A. M. Telephone 2,472.

Dr. EDWARD B. WESTON has removed his residence from 3225 Vernon Avenue to 3975 Drexel Boulevard. Hours, 6 to 7:30 P. M. Telephone, 10,183.

Professor ANGERER has been definitely chosen to succeed the late Professor von Nussbaum in the Chair of Surgery in the University of Munich.

On February 3d Dr. JOHN S. BILLINGS was chosen by the trustees of the University of Pennsylvania Director *pro tem.* of the new Department of Hygiene.

Dr. WILLIAM E. MORGAN, of 34 East Twenty-ninth street, lost his wife March 23d by pneumonia. The sympathy of all is with the bereaved husband and child.

Dr. A. REEVES JACKSON, who is making a tour around the world, sails about April 4th from Yokohama, Japan, for home, and is expected in Chicago about May 1st.

Dr. EDOUARD CHANTRE has been commissioned by the French Government to study the organization and practical working of the various "polikliniks" in Germany and Austria.

The past month has been marked by much illness in the profession. Among many others Drs. J. H. HOLLISTER, TRUMAN W. MILLER, and CHRISTIAN FENGER have been confined to house and bed.

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It is announced on good authority that the chair of surgery in Rush Medical College, made vacant by the death of Dr. Parkes, will be divided between NICHOLAS SENN, of Milwaukee, and ROSWELL PARK, of Buffalo.

Colonel CHAS. SUTHERLAND has been appointed by President Harrison to the office of Surgeon-General of the Army, made vacant by the death of General J. H. Baxter. His rank is that of Brigadier-General.

The President of the French Republic has conferred on Professor VON HELMHOLTZ the Grand Cross of the Legion of Honor. This is said to be the first time since 1870 that this distinction has been conferred on a German.

Plans are out, furnished by S. S. BEMAN, the architect, for a new four-story building for the Chicago Medical College. It is to cost one hundred thousand dollars, and is to be located on Dearborn street, near Twenty-fourth.

HERR VIERECK, formerly a representative of "Social Democracy" in the German Chamber of Deputies, has addressed a petition to the Reichstag, praying that the use of Koch's fluid be prohibited, as being dangerous to the public.

Influenza in Chicago during the past month has been as active as a year ago, and if possible more virulent. The accompanying pneumonia has been particularly intractable, and diphtheria and scarlet fever have been prevalent. There has been no leisure for physicians here.

Dr. SENN, of Milwaukee, Surgeon-General of Wisconsin, is desirous of obtaining the name and address of every military surgeon of the National Guard in the United States, for the purpose of taking the necessary steps toward the formation of a permanent national association.

To avoid confusion, and at the courteous request of WM. WOOD & Co., of New York, a slight change in the name of this journal has been determined upon, and hereafter it will appear under the title of THE CHICAGO MEDICAL RECORDER.

COMMITTEE ON PUBLICATION.

The Imperial authorities of Russia invited Sir JOSEPH LISTER, Dr. KOCH, and Professor PASTEUR to a conference, with a view to

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establishing a bacteriological institute at St. Petersburg. Sir Joseph Lister was unable to accept the invitation, and Mr. Watson Cheyne took his place as the English representative.

The Michigan State Board of Health has decided that "any person or pupil known to be affected with pulmonary consumption should be excluded from all public schools, colleges, and other institutions of learning until such person or pupil is so far recovered from consumption that no cough or expectoration occurs."

A cablegram announces that four deaths have occurred within five days as a result of the transfusion of blood according to the method of Dr. BERNHEIM, and that the Bernheim treatment is more dangerous than treatment by the Koch method. Dr. Bernheim, however, maintains that he has had success in eighty cases of tuberculosis.—*New York Medical Record.*

A commission of six medical men appointed by the Spanish Government to investigate the Koch method of treating consumption has reported in favor of the total suspension of that form of treatment, it having been found, according to the committee's report, that not a single cure had been effected there by the use of the method.—*New York Medical Record.*

A case of small-pox has developed at the Cook County Infirmary in a man sent there by the County Agent. He had recently arrived from St. Louis. Every care is being exercised to prevent the spread of the disease in the Infirmary and adjoining Asylum for the Insane by isolating the case, vaccinating the entire population, and such other precautions as are indicated.

At the annual meeting of the Alumni Association of the College of Physicians and Surgeons of Chicago the following officers were elected: President, Dr. D. B. Wylie, Chicago; Vice-President, Dr. J. R. Williams, White Pigeon, Mich.; Treasurer and Secretary, Dr. T. A. Davis, Chicago; Executive Committee, Drs. N. E. Remmen, N. H. Henderson, and F. C. Mattison, all of Chicago.

The German Emperor has conferred the Order of the Red Eagle (Third Class) on Surgeon-General GRASNICK, Sub-Director of the Friedrich Wilhelm Medico-Chirurgical Institute, and Professor O. FRANTZEL; the Order of the Crown (Second Class)

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on Professor AUGUST HIRSCH, the author of the well-known treatise on Medical Geography; and the Order of the Crown (Third Class) on Dr. PISTOR.

RANSOM DEXTER, A.M., M.D., LL.D., died of heart failure on the 3d of April at the age of sixty years. He graduated in medicine in 1862 from the University of Michigan, and has long been in command of a large practice in Chicago. For twelve years he was Professor of Anatomy and Physiology in the University of Chicago. At the time of his death he was medical examiner for several insurance companies.

NICOLAS WISSOBSKY, Professor in the University of Kazan, Russia, reports that living micro-organisms have been found in the lymph sent directly from Koch's laboratory and are being studied by culture, and that the reaction of the lymph differs with time, gradually becoming alkaline, probably changing in activity and in other particulars. This may explain the uncertainty of its action.—*Sem. Med.*, March 11, '91.

The following medical gentlemen, graduates of the classes of 1891, have secured by competitive examination the position of interne in the respective hospitals: Cook County Hospital, A. R. EDWARDS, J. B. DELEE, D. N. EISENDRATH, F. X. WAHLS, F. N. COCHEMS, R. B. PREBLE, A. A. KNAPP, W. E. DURR. Dr. Knapp is from Rush, the others from the Chicago Medical College. Presbyterian Hospital, GEO. L. BEACH, D. L. SHAW, P. L. FOX, all of Rush. Mercy Hospital, R. H. STURGEON, J. S. MCNAMARA, GARRETT HAGENS, all of the Chicago Medical.

LIEBREICH has given to the Berlin Medical Society an account of his newly proposed remedy, which consists of cantharidate of potash—being 0.2 gram of pure cantharidin and 0.4 gram of potassic hydrate—in 20 cubic centimetres of water. He uses the remedy by subcutaneous injections, beginning with not more than one-fiftieth part of a decimilligram of the solution. The dose is gradually increased until one or two decimilligrams have been attained; it is likely that six decimilligrams will be found to be the maximum dose.—*Journal of American Medical Association.*

At the annual meeting of the Alumnæ of the Woman's Medical College of Chicago a marble bust of the late Dr. WILLIAM H. BYFORD was unveiled. It is of Carrara marble by Lorado Taft,

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of this city, after a death mask made by Mr. Taft, and is a very faithful likeness of the founder and late President of the school, in which he maintained an unflagging interest to the day of his death. Professor Mary J. Mergler made the dedicatory address, and further remarks were made by Drs. Mary H. Thompson, Emma Nichols and Professors Daniel R. Brower and I. N. Danforth.

The Illinois State Board of Health has decided that hereafter it will recognize no foreign diploma that does not confer upon its holder the right to practice medicine in the country in which it was granted. The holder of an Austrian, a German, Russian, or Swiss diploma, wishing to practice in Illinois, must hereafter pass an examination before the Board, unless he have a pass certificate from a government examining commission. The holder of a Canadian diploma, unless a licentiate of the College of Physicians and Surgeons of Ontario and Quebec, must pass an examination in order to be licensed in Illinois.

The following is given by the *Scientific American* as the annual death rate per one thousand of population in the eight principal cities of the United States. It will be observed that Chicago heads the list as being by far the healthiest city of the lot:

Chicago	16.93
Philadelphia	18.97
Baltimore	19.31
San Francisco	20.23
New York	22.22
Brooklyn	22.41
Boston	23.64
New Orleans	48.48

At the meeting of the Medical Society of the County of New York held on Monday evening, Dr. Fred R. Sturgis read a paper on the question, "Under What Circumstances and to What Extent May Members of the Medical Profession Properly Permit their Names and Opinions to be Published by the Secular Press?" Drs. A. Jacobi, Daniel Lewis, A. S. Hunter, George F. Shrady, and D. B. St. John Roosa took part in the discussion. While it was acknowledged that it was proper to inform the public on medical matters of general interest, the practice of advertising

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the individual man as possessing special skill in the treatment of disease, etc., was severely criticised. The doctor was privileged on proper occasions to speak for the profession, to quote its opinions or give its conclusions, but not to magnify his own importance at the expense of his brethren.—*New York Medical Record*, March 25, '91.

The annual reunion of the alumni of the Rush Medical College at the Palmer House, March 31, was a sad occasion. On account of the recent death of Professor Parkes the banquet, which is usually a feature of the reunions, was omitted, and there was nothing but the regular business meeting. Officers were elected for the ensuing year as follows: President, Dr. O. B. Will, of Peoria; First Vice-President, Dr. E. S. Atwood, Chicago; Second Vice-President. Dr. W. T. Green, Albion, Ind.; Secretary and Treasurer, Dr. F. A. Emmons, Chicago; Executive Committee, Drs. E. B. Weston, I. B. Washburne of Rensselaer, Ind., and Frank Carey of Chicago; Committee on Necrology, Dr. J. J. M. Angear; Auditing Committee, Drs. E. S. Atwood and L. L. McArthur. The President announced the death during the year of four members of the faculty, Drs. J. Adams Allen, J. P. Ross, William H. Byford, and Charles T. Parkes. A committee was appointed to prepare appropriate resolutions on the death of the four members of the faculty. A class of one hundred and seventy-eight was graduated.

The following resolutions were adopted by the Faculty of the Chicago Medical College at a meeting held on the twenty-eighth day of February, 1891:

RESOLVED: That by the death of HOSMER ALLEN JOHNSON, M.D., LL.D., the Chicago Medical College has lost the services of one of its founders and most active, able and eloquent teachers; the Northwestern University one of its wisest trustees and counsellors; the Medical Profession one of its most learned, honorable and influential members; and the community one who for nearly forty years has been an active, skillful and untiring benefactor to the suffering, alike in peace, in war, and in the midst of the direst of conflagrations.

RESOLVED: That to his bereaved family and friends we tender our most sincere and abiding sympathy and the assurance that their temporal loss is his eternal gain.

RESOLVED: That the Secretary of the Faculty furnish a copy of the foregoing resolutions to the family of the deceased and to the medical and other periodicals of this city.

N. S. DAVIS, M.D., LL.D.,
EDMUND ANDREWS, M.D., LL.D.,
RALPH N. ISHAM, A.M., M.D. } Committee.

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The following resolutions were adopted by the Faculty of the Chicago Policlinic at a special meeting held on the thirty-first day of March, 1891:

RESOLVED: That the untimely death of Dr. CHARLES T. PARKES, A.M., M.D., has deprived the Chicago Policlinic of one of its most able and renowned teachers, the faculty of a beloved and respected member, the medical fraternity of its brightest ornament, and all who knew him of a kindly, genial and considerate friend; that rich and poor share alike in his loss; and that suffering humanity will long seek such a rare combination of sympathy and tenderness, skill and power.

RESOLVED: That our sincerest sympathy be extended to his bereaved family and friends, in whose grief it is our privilege to share.

RESOLVED: That the Secretary of the Faculty furnish a suitable copy of these resolutions to his family and to the medical press.

Signed— TRUMAN W. MILLER,
WILLIAM T. BELFIELD,
FERDINAND HENROTIN,
ROBERT D. MACARTHUR,
JAMES H. ETHERIDGE,
} Committee.

Resolutions on the death of Professor C. T. PARKES, read at class day exercises March 30, 1891, at Rush Medical College:

Whereas: An inscrutable Providence has seen fit to suddenly take from our midst one of our most beloved Professors, one noted not only at home for good-fellowship, and unexcelled ability as a teacher, but abroad for his wide charity and brilliant attainments;

Whereas: In the death of Professor Charles T. Parkes, the medical profession at large has lost one of its most active members and brightest lights, the College one of its most indefatigable workers, the student-body a true friend, an inspiring example, and one who always had its best interests at heart; therefore be it

RESOLVED: That we, the graduating class of Rush Medical College of 1891, recognizing in our beloved friend a man possessed of an almost unlimited energy, a man fired with unceasing devotion to duty, whose watchword was thoroughness, in whom the three great traits of physical, intellectual, and moral development were combined to a pre-eminent degree, do hereby express our heartfelt grief and our consciousness of an irreparable loss.

RESOLVED: That we hereby tender to his bereaved household our deepest sympathy and condolence.

RESOLVED: That a copy of these sentiments be sent to his afflicted family; that a copy be placed on file in the College records, and that these resolutions be duly published.

C. H. LEMON,
H. G. MCCORMICK,
L. M. SQUIRE,
} Committee.

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REPORT OF THE CHICAGO HEALTH OFFICE.

For March, 1891.

Population, 1,200,000.

DEATHS.		DEATHS—Continued.	
Measles	39	Bronchitis	199
Scarlet Fever	62	Capillary Bronchitis	92
Diphtheria	80	Pleurisy	5
Pertussis	24	Congestion of Lungs	28
Typhoid Fever	71	Phthisis Pulmonalis	231
Influenza	155	Violence	87
Pneumonia	722	Suicide	21
Children under five years of age			1,466
Total deaths from all causes			3,405
Ratio per thousand of population			34.05
Ratio per thousand of population, March, 1890			22.52

CASES REPORTED.

Diphtheria	142
Scarlet Fever	302

METEOROLOGICAL SUMMARY.

For March, 1891.

MEAN BAROMETER	30.060
Highest Barometer, March 1	30.542
Lowest Barometer, March 31	29.528
MEAN TEMPERATURE	30.6
Highest Temperature, March 17	57
Lowest Temperature, March 4	7
Greatest daily range of Temperature, March 10	32
Least daily range of Temperature, March 24	0
Total deficiency in temperature during month	111°
Total excess in temperature since January 1st	164°
Prevailing direction of wind	N. E.
Total movement of wind, miles	12,879
Extreme velocity of wind, direction, March 15	56; S.W.
TOTAL PRECIPITATION.....inches	2.13
Number of days on which .01 inch or more of precipitation fell	15
Number of cloudless days	2
Number of partly cloudy days	12
Number of cloudy days	17

T. F. Schley,
Sergeant U. S. Signal Corps, Chicago, Ill.

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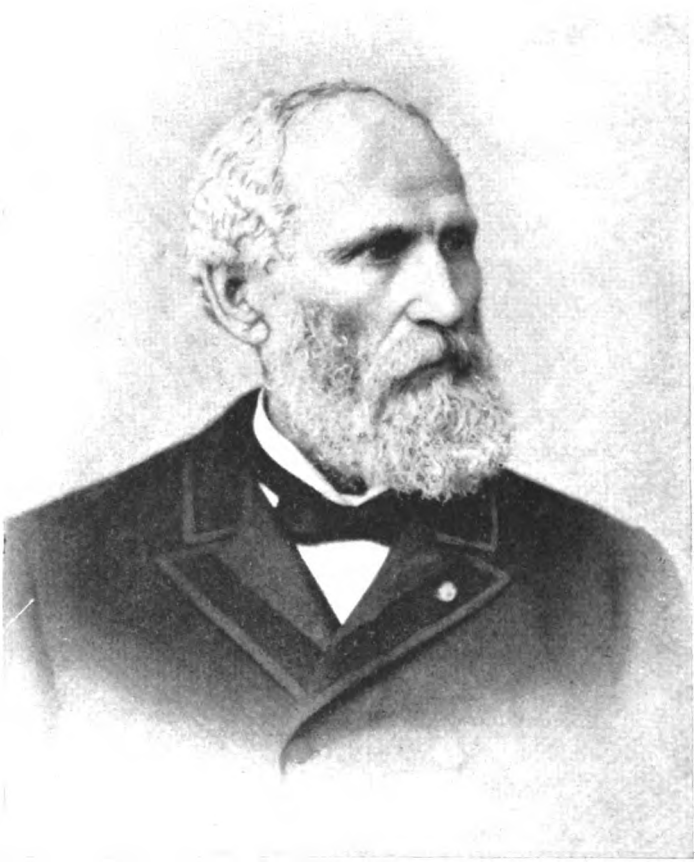

H. A. JOHNSON, M. D., L. L. D.

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THE

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Original Articles.

ON THE IMPORTANCE OF GONORRHŒA AS A CAUSE OF INFLAMMATION OF THE PELVIC ORGANS.*

BY GEORGE GRANVILLE BANTOCK, M.D., F.R.C.S. EDIN.,
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Read in the Section of Obstetric Medicine and Gynæcology at the Annual Meeting of the British Association held at Birmingham, July, 1890.

When, in 1872, Dr. Noeggerath for the first time published his views on this question under the title *Latent Gonorrhœa in the Female Sex*, so obviously exaggerated were some of his statements that, as he himself subsequently admitted, they "were not received very favorably by the medical press." Four years later, namely, in June, 1876, he returned to the subject by reading a paper before the American Gynæcological Society, entitled "Latent Gonorrhœa, especially with regard to its Influence on Fertility in Women." This was apparently a reproduction of his orignal views, and the same exaggeration of statement char-

*British Medical Journal, April 4, 1891.

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acterized it. It will be convenient to give here his conclusions as the formulated expression of his views. They are as follows:—

1. "Gonorrhœa in the male as well as in the female persists for life in certain sections of the organs of generation, notwithstanding its apparent cure in a great many instances.

2. "There is a form of gonorrhœa which may be called latent gonorrhœa in the male as well as in the female.

3. "Latent gonorrhœa in the male, as well as the female, may infect a healthy person either with acute gonorrhœa or gleet.

3. "Latent gonorrhœa in the female, either the consequence of an acute gonorrhœal invasion or not, if it pass from the latent into the apparent condition, manifests itself as acute, chronic, recurrent perimetritis or ovaritis, or as catarrh of certain sections of the genital organs.

5. "Latent gonorrhœa, in becoming apparent in the male, does so by attacks of gleet or epididymitis.

6. "About ninety per cent. of sterile women are married to husbands who have suffered from gonorrhœa either previous to or during married life."

These conclusions were at the time of the reading of the paper severely criticised by men who represented city and country practice. One gentleman used the naïve but pertinent argument that "he had ascertained in conversation with twenty different physicians who acknowledged having had gonorrhœa in early life, that in no single case had any such symptoms as had been referred to been developed in their wives, and all had had large families of children."

Before the publication of this second paper, the late Dr. Angus Macdonald reported some cases in support of Noeggerath's views. Regarding these I will only say that while Sinclair quotes them with full acceptance, Sänger refers to them as instances of wrong diagnosis.

After the detailed criticism of Noeggerath's second paper by Chadwick, the first to enter the field was the late Dr. Thorburn, of Manchester, who took up the challenge in a paper read before this Association in Manchester in August of the following year, on "Latent Gonorrhœa as an Impediment to Marriage." In contradiction to the conclusions arrived at by Noeggarath, Dr. Thorburn "appealed to the statistics of eighty-one private fami-

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lies carefully collected by himself. He showed that there had been thirty-three per cent. of male gonorrhœic infections previous to marriage, twenty-six in all; and, taking all the cases of abortion, sterility, uterine and pelvic inflammations and living births that had occurred in these eighty-one families, he showed conclusively that there had been the merest fractional difference in their proportion between the previously and not previously infected classes. As regards inflammatory pelvic affections, the balance was fractional in favor of the non-gonorrhœic."

Hitherto opinions on the subject of gonorrhœa were based on clinical investigation, but with Neisser's publication of his observations on the gonococcus (in 1879), which had been discovered ten years previously by Hallier, the question entered upon a new phase; the literature of the subject soon assumed large proportions, and the microscope usurped the place of clinical observation. The fortune of war fluctuated between the supporters and the opponents of Neisser's views, yet so much in favor of the opponents that Neisser himself has, in the meantime, been compelled to modify his original views, just as, according to Sinclair, "Noeggerath has lived to greatly modify his first impressions." Confusion entered upon the scene when Bumm, of Würzburg, announced the discovery of more than one diplococcus—five in all—exactly similar to, and indistinguishable by the individual form alone, from Neisser's gonococcus. This state of confusion was not diminished when Kammerer stated that he had found the gonococcus in the fluid obtained from a knee-joint affected with gonorrhœal rheumatism. Nor did it tend to clear up the subject when Kroner, of Breslau (in 1884), formulated his conclusions as the result of his observations on ninety-two cases of ophthalmia neonatorum that there are two forms of blennorrhœa, between which he is unable to make out any clinical difference. On the same occasion Sänger, of Leipzig, stated that the hope aroused by the discovery of Neisser that in the gonococcus we should find a means of diagnosing chronic gonorrhœa had proved to be vain, that it was established as a fact that gonorrhœa could exist without the demonstrable presence of gonococci, and that while the absence of gonococci proved nothing against the gonorrhœal nature of the disease, the presence of diplococci, "seeing there were several varieties indistinguishable from one another,"

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did not prove the gonorrhœal nature of the disease. (Here Sänger distinctly throws over the microscope in favor of clinical observation.) Such is the force of Sänger's statements, that Sinclair is constrained to say "that there can be little doubt as to the difficulty of finding the gonococcus in chronic gonorrhœa in women. In cases of only a few months standing, most certainly gonorrhœal in their nature, which have been under treatment, it has been almost invariably impossible to discover the gonococcus, however numerous other bacterial forms might be. If this be established as a fact by general experience, the sooner it is recognized as a fact the better." This has an important bearing on Noeggerath's statements as to the incurability of this affection. Fortunately, at the present day, we are spared the trouble of refuting these and other statements, for Noeggerath has now (that is, since 1887) given up those pessimistic opinions on the question of incurability, which Sänger, in 1884, had declared to be no longer tenable, as to the proportion in which married men who have this disease infect their wives, and the frequency of sterility.

But as if to render confusion worse confounded, in the following year (1885) Fränkel published his observations on non-gonorrhœal colpitis in children, in which he found diplococci which were in every respect identical with the gonococcus. In this he was confirmed by Cséri, of Budapesth, who, in the examination of the discharge in twenty female children from two to ten years of age, found in every case a large diplococcus, bearing a striking resemblance to Neisser's gonococcus. In his opinion both cocci appeared to be biologically identical. The discharge also was very contagious, and he mentions a case in which a nurse lost her eye through accidental infection in the act of syringing a child affected with the disease.

Such, then, is the confusion in which a reliance on the microscope has landed us, and, although we are told that a method has been discovered by which the true gonococcus can be distinguished with certainty, yet the test is so delicate and complicated that it is practically of little use. It is evident, then, that we must fall back on rigid clinical observation in order to arrive at definite and exact results.

In the study of this subject contradictions meet us on every

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hand. When we come to the question of the manner in which the disease spreads from without inwards, opinions are equally divergent. Observers are even at variance as to the part played by the gonococcus itself. Thus Bumm affirms that gonorrhœic para- and perimetritis cannot be explained by the action of gonococci; he says there must be another agent, and to account for these conditions he starts the theory of "mixed infection," that is, the addition to the gonococcus of one or more forms of bacteria. It would be unprofitable to dwell on this question.

Again, to account for the obscurity surrounding so many cases of supposed gonorrhœal infection, and to explain away the absence of direct clinical evidence, the theory of "latent gonorrhœa" was advanced by Noeggerath, and it may be assumed that it was this idea which led him to adopt those pessimistic views and make those exaggerated statements from which he has since been obliged to recede. Sinclair has warmly espoused this theory, and, in my opinion, to such an extent as not merely to weaken, but in many respects to effectually destroy, his argument. After describing the chief points in a fairly typical case, he tells us that the "symptoms and signs of the disease vary greatly." These are reached either through a more or less acute attack subsiding into the chronic form, or by gradual development of the creeping form of gonorrhœal invasion, in which, be it observed, "an acute stage either does not exist, or altogether evades observation." The explanation, he says, "is sought in Noeggerath's idea of latent gonorrhœa in the male." The virulence of the gonorrhœal infection appears to depend upon the number and vitality of the gonococci contained in the infecting matter. In an acute attack the number of the gonococci in the secretion is at its highest "with corresponding vigor and vitality of the organism." Hence the infection is conveyed quickly and with certainty. "At the other end of the scale you have the sort of attack produced by the infecting matter, from a man who had been the subject of an acute attack many months, perhaps years, before. Yet we have heard that in cases of only a few months' standing, and after treatment, it has been almost invariably impossible to discover the gonococcus." To explain away this absence of the gonococcus in old-standing cases we find the most extraordinary theory we have yet come across advanced, namely, that "the

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gonococci are few and decrepit, probably altogether absent from the periodic emissions of a continent man. It is only the post-nuptial sexual excess that rouses them into sufficient vigor to be harmful." To say that this is a mere speculation, and totally opposed to all analogy, is a mild way of expressing dissent, and one is inclined to re-echo the words of Angus Macdonald, when, in speaking in general terms of Noeggerath's views, he said: "I must confess, however, that I cannot help feeling convinced that he proves too much." I have already called attention to the difficulties surrounding the task of demonstrating the presence of the gonococcus, and although Neisser says he has discovered it as long as three years after the acute attack, yet most investigators have failed to find it a comparatively short time after the disappearance of the acute symptoms.

Once more, to account for the signs and symptoms of the disease in the absence of the gonococcus, Sänger has advanced another speculative idea, namely, that of "a spore as the permanent form of the contagium." Even Sinclair characterizes this as "a mere hypothesis."

Coming now to the more practical aspect of the question, the same divergence of views is observed. Taking Dr. Sinclair's monograph as an excellent summary of this subject, we find the following. Speaking of the acute form, he says: "In the female the urethral form never occurs without other portions of the genital tract becoming involved;" a very strong statement, on a par with what follows, namely: "but the converse proposition is not true; the uterus may be affected, and the most serious complications may develop in the pelvis without the patient ever having noticed any discomfort in micturition." That is a proposition to which I am unable to accord my assent; for it seems to me a strange doctrine that, while the disease extends with the greatest facility from the urethra upwards to the uterus, it meets with obstruction in the opposite direction, in both cases the vagina merely serving as the impartial channel of communication. For it is acknowledged to be "still" a question whether there is any such thing as a "gonorrhœal vaginitis." The very opposite conditions commend themselves to my mind as at least more reasonable. But inconsistency follows upon inconsistency, for he maintains that in the acute form of gonorrhœa in women the

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ordinary typical attack extends to the cavity of the uterus, but there is still room for doubt whether, in the ordinary typical case, the process also involves to some extent the tubes, "ovaries and pelvic peritoneum," but he firmly believes that such an extension of the disease is by no means unusual, though it ordinarily disappears without recognition. "We sometimes find that the peritoneum has been reached in a remarkably short period from the time of patient's first contact with the infecting discharge, but as a rule the process takes from two to three months, while it still may be considered in the acute stage." Yet he admits that a general peritonitis, as a result of gonorrhœal infection, must be a very rare occurence.

How very forcibly this contrasts with his opening sentences, in which he says: "Gonorrhœa, as it occurs in the female sex, is still in this country strangely neglected by general practitioner and specialist alike. Its symptoms, the ravages which are its immediate or remote results, are hardly recognized or understood. Yet the virus of this disorder gives rise to a group of diseases, a series of pathological conditions, which, by reason of their social and moral consequences, surpass in importance any other class of affections with which the gynæcologist is called upon to deal." Surely this is the language of exaggeration, which seems to be fatally connected with this subject. Would that Dr. Sinclair had been more mindful of the sentiment thus expressed in his own words. "It is necessary to guard against exaggeration, for there is a danger that in rousing from long ignorance and neglect of the subject, the professional mind may sway to the other extreme, and, amidst the phenomena of disease, obscure in their nature, and as yet inexplicable, be tempted to accept gonorrhœal infection as an easy and sufficient explanation of morbid processes with which it has no kind of causal relation."

Now I would not for a moment have it even suspected that I am desirous of minimizing the importance of this disease, much less of denying its power of evil, or that it is capable of producing salpingitis, with its various results, ovaritis and pelvic peritonitis, even to a fatal termination, yet I must insist on a more rigid adherence to the teaching of facts actually observed.

It is at least a strange fact that I have never seen a case in which I could obtain incontestable confirmatory evidence that a

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case of salpingitis, pyosalpinx, much less hydrosalpinx, ovaritis, or ovarian abscess, was of gonorrhœal origin, although I take every precaution so that the history of each case of disease of the appendages where I operate should be as complete as possible. But there is no reason why I should refuse to accept the well-authenticated evidence of other observers. Even Sänger, who admits the frequency of gonorrhœal salpingitis, goes so far as to say that "gonorrhœal salpingitis" is never followed by a "destructive suppuration" of the uterine appendages; it remains invariably a disease of the surfaces of the mucous and serous membranes. While engaged in the special study of this subject for the purpose of this discussion, in which I acknowledge my special obligation to the labors of my friend Dr. Sinclair, already referred to, I have met with several cases of interest.

About the same time I was consulted by two patients, whose conditions and symptoms were such as to lead me to make special inquiries. In both there was a copious greenish yellow discharge, with redness of the orifices of the vulvo-vaginal glands, and well marked evidence of tubo-ovarian mischief, in the tenderness, enlargement and apparent fixation of the appendages; in A, on both sides; in B, on the left side only. Sterility existed in both cases, four years in one and nine years in the other. In the case of A. the following facts were obtained: A great deal of "whites" before marriage; after three or more months discharge became more abundant, and instead of being white became yellow; about the seventh or eighth month first experienced pain on sexual connection; on one occasion the act performed in the early morning was more than usually painful; in the course of the day, while out walking, was seized with some pain in the left ovarian region, felt sick and fainted; was laid up for a week, and has never been well since. She was the second wife of her husband. He had had gonorrhœa three times before his first marriage, his wife bore him two children without any untoward result, but died from heart disease in her third pregnancy, undelivered at eight and one-half months. He had not even exposed himself to disease after his first marriage.

In the case of B., the physical conditions were very similar, with the exception that the pelvic disease was limited to the left side. On the question of gonorrhœa I requested her usual medi-

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cal attendant to obtain information for me. His answer is emphatic. He (the husband) completely denies ever having had any ailment whatever of this nature, and, what is more strange still, tells me that "he was virtuous, never having known woman until his marriage."

In both these cases we have a train of signs and symptoms which tallies very closely with those which are to be found in cases quoted as undoubted examples of gonorrhœal infection, even to the redness of the orifices of the vulgo-vaginal glands, the copious, greenish-yellow leucorrhœa, dysmenorrhœa and pelvic mischief. But he would be a bold man who would assert that gonorrhœa played any part even in the first case.

On the other hand, I have recently seen, with Dr. Campbell Pope, a patient who had contracted gonorrhœa from her husband, and at the time of her first confinement some years ago had an abundant crop of syphilitic warts, not only on the external parts, but also in the vagina. She was very ill with pelvic mischief for many weeks, but ultimately got well. At the time of our consultation she was ill again with pelvic symptoms (threatened puerperal fever) after a premature confinement, the fourth pregnancy since her first illness. Here the symptoms following her first confinement may fairly be set down as the result of gonorrhœal infection, but this did not produce sterility ; and I am not prepared to accept Sinclair's dictum that "the woman who has suffered from gonorrhœal perimetritis is barren."

It is to my mind very strange how Noeggerath and those who think with him ever could have come to the conclusion that gonorrhœa plays such an important part in the production of sterility in the face of the large number of cases of ophthalmia neonatorum that are due to gonorrhœal infection. If this view were well founded, then the infection must have taken place after the pregnancy had begun. Otherwise we must assume that it is only a coincidence or an accident that gonorrhœa and sterility ever stand in the relation of cause and effect.

My own observations fail to supply me with a single instance in which gonorrhœa has produced sterility in the male. One striking example comes before my mind of a gentleman whose wife was barren. This fact might be seized on as a case in proof

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were it not for the fact that he was anything but impotent or sterile in the case of another woman, to my certain knowledge.

As the result of my inquiries at the Lock Hospital and amongst numerous general practitioners, I have failed to find any evidence to support the statement that this disease "gives rise to a group of diseases, etc., which surpass in importance any other class of affections with which the gynæcologist has to deal." In the Lock Hospital I was informed by the house-surgeon that he was unaware of a single instance of pelvic disease following gonorrhœal infection. General practitioners tell pretty nearly the same tale of numerous examples of gonorrhœa in young men—marriage, no evil consequences. Listen to what the late Dr. Bumstead said in the fifth edition of his work on *Venereal Diseases*, in a very short notice of Noeggerath's extreme views, and in which he employed a weapon which, according to the French proverb, is so deadly—namely, ridicule. He said that at one of the annual meetings of the British Medical Association, one of the speakers announced that Dr. Noeggerath's views were so generally known and accepted in America that one of the first questions asked by the parents of every young lady to whom marriage was proposed by a gentleman was whether he had ever had the clap: "In short," he adds, "even if eight hundred out of one thousand men have had the clap, the human race did not die out long ago, but still exists, and shows no tendency, so far as I know, to diminution." But a more sober testimony—and it is the last quotation I shall trouble you with—on the authority of Sinclair, is that offered by Martineau, who, after a very long experience and an enormous amount of material from which to form conclusions, says: "You will find by a close examination of the material that primary uterine blenorrhagia is extremely rare. In about two thousand cases I have seen it only ten times at most. You will find, further, that ovaritis and salpingitis are so rare that I have not been able to pick out a single case. As to pelvic peritonitis, I have found it only twice." My opinion, then—an opinion founded on my own observation and on a study of the literature of the subject—is that "the importance of gonorrhœa as a cause of pelvic inflammation" consists in the fact that in a few or limited number of cases it seems to be capable of producing most serious symptoms, rarely, however, terminating in death, and that this importance is diminished by the fact that these cases are comparatively very rare.

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A STUDY OF A SERIES OF DEGENERATE AND CRIMINAL CRANIA.

By G. FRANK LYDSTON, M.D.,

Fellow of the Chicago Academy of Medicine and of the Southern Surgical and Gynæcological Association.

Presented before the Chicago Medical Society, April 20th, 1891.

It is my fortune to be able to present to the Society a series of specimens illustrative of the aberrant types and asymmetry found in degenerate skulls, and especially those of criminals. These specimens are especially interesting from the fact that they have not been selected from among a large number, but have been picked up here and there by non-scientists solely for their morbid and historic interest, having subsequently fallen into my hands quite by accident. It is worthy of comment that even the remarkable series depicted in Lombroso's Atlas does not present

FIG. 1—Front View of Extreme Dolicho-cephalic Cranium.

such markedly aberrant types as this comparatively small series of studies; indeed, a search among several thousand skulls would not be apt to bring to light such peculiar types of conformation as the crania which we present. The illustrations are from photographs and are exceptionally accurate.

The specimen first to be described is one of the most interesting crania which have I had the privilege of studying. The subject was a negro criminal of the petty class, who spent most

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of his time in correctionary institutions. As might be inferred from the extremely degenerate type of cranial development which is here exhibited, he was of a very low grade of intelligence. After a very precarious existence this negro committed suicide.

In viewing this skull from the front, one is at once struck by the immensely powerful maxillary and malar development as contrasted with the remainder of the cranium. The orbits are relatively very capacious. The superior maxilla is relatively poorly developed, at least as compared with the lower jaw. Rarely indeed, is such an inferior frontal development found associated with such a pronounced facial development.

As will be seen in connection with the specimen of brachy-cephalic degeneracy shown in Figs. 21, 22, 23 the frontal development in this narrow type of skull may be vastly better than some specimens with a decided tendency to the brachy-cephalic type. The skull at present under consideration is the most marked specimen of the dolicho-cephalic cranium which I have seen. As the cephalic index in this case is 59.9, the extreme variation according to Isaac Taylor and others being from 58 to 98, the extreme type of this skull is at once obvious.

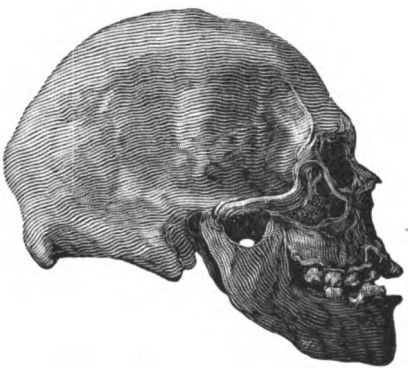

FIG. 2.—Lateral View of Extreme Dolicho-cephalic Skull.

On viewing this skull laterally, its strong similarity to the anthropoids is very striking. This is especially marked with respect to the development of the mastoids and the occipital protuberance; the position of the latter is quite an anomalous one, and the occipital bone is almost horizontal. Despite its extraordinary development, the occipital bone is relatively small, both

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transversely and in its vertical measurement. The distance from the posterior border of the foramen magnum to the superior occipital angle is only 103 m.m.

On contrasting with any of the other crania of the series, the relative shortness of the occiput is very noticeable. For example, Fig. 10, which is a rather small specimen, distinguished rather by the symmetry than the extent of its development, shows an occiput measuring 130 m.m. from the foramen magnum to the superior angle of the occipital bone.

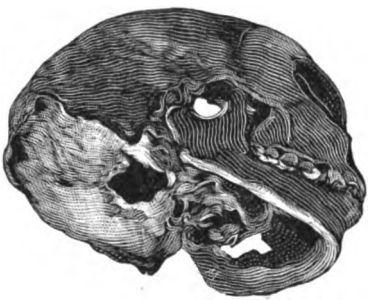

FIG. 3.

Fig. 3 shows the inferior surface of this dolicho-cephalic specimen, and brings out the massive development of the processes and muscular attachments at the base of the skull. It is evident that the muscles of the neck in this case were immensely powerful, a *sine qua non* where the leverage for muscular action is so short as in this particular occiput. The facial type in this specimen is markedly prognathous as regards both upper and lower jaws.

The *tout ensemble* in this case is strongly suggestive of a reversion to the anthropoid type, which is often the distinguishing characteristic of the degenerate Ethiopian type, criminal or otherwise. The following are the measurements of this exceedingly interesting cranium:

Cephalic index	59.9
Circumference	48.4 c.
Anterior demi-circumference	21.3 c.
Posterior demi-circumference	26.9 c.
Bi-zygomatic diameter	13.3 c.
Longitudinal diameter	196.5 m.m.

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Transverse diameter ..... 122 m.m.
Vertical diameter (vertex to foramen magnum) ..... 132 m.m
Occipito-mental ..... 241.5 m.m.
Bi-frontal diameter ..... 95 m.m.
Bi-mastoid diameter ..... 114 m.m.
Over vertex, from ear to ear ..... 317 m.m.
Ant. bord. foramen mag. to sup. occipital angle ..... 103 m.m.

The excessive development of the jaws and alveolar processes in this specimen are such as are generally observed in the negro races, in whom the jaws are usually well developed, and rarely deformed. The only noticeable feature of this particular specimen is a high palatal vault.

FIG. 4.—Skull of Mongolian suicide. Brachy-cephalic.

The next specimen is not especially noteworthy from the standpoint of degeneracy, being interesting chiefly on account of its peculiar history, and its exceedingly fine development. It is, however, an excellent illustration of the brachy-cephalic cranial type.

The subject was a Chinese cigar-maker of Chicago, who is remembered to have been thoroughly civilized and quite prosperous. Physically, he was a fine, well-developed and handsome fellow. He became engaged to a white girl, whose Mongolian affinity weakened at the last moment, and this, preying upon his mind, impelled our Mongolian friend to shoot himself. This was noteworthy, as this subject was the first Chinaman in America to commit suicide, and there has been but one since, as far as I

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can learn. The peculiar religious belief of the Chinese explains the rarity of suicide among those in America.

The contrast between the negro skull, Fig. 1, and Fig. 4 is very striking, and obvious to the most careless observer. A front view of this specimen shows a splendid development of the jaws and teeth. I have never seen a finer or more regular set of teeth than this. Like the negro race, the Chinese is characterized by well-formed and strong jaws and teeth.

FIG. 5.—Skull of Mongolian suicide. Brachy-cephalic.

The characteristically excessive development of the facial and jaw bones among the Chinese is well shown by a lateral view of this skull. The disproportionate development of the face and jaws in this instance is, however, much above the average Mongolian skull. By comparing the two views the brachy-cephalic type of the cranium is readily observed. By comparing the views of this cranium with those of the negro shown in Figs. 1 and 2 one may observe the wide difference between the extreme types of high and low cranial indices. This is nowhere better shown than by a comparison of marked Ethiopian and Mongolian types.

On examination of the crania of the more degenerate types among the Chinese it will be found that the tendency is toward a high cranial index. The tendency of the degenerate types of a brachy-cephalic race to become more brachy-cephalic, and that of a dolicho-cephalic race to become more dolicho-cephalic is peculiar, but is borne out as far as my opportunities for study have permitted me to observe.

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Aside from a change in the cranial index there are seen, among negroes particularly, many peculiar aberrations of form, one of which is shown in Fig. 16. The palatal arch in this Mongolian specimen is high, and the alveolar processes excessively developed. The measurements of this skull are:

Index	83.9
Circumference	50.6 c.
Anterior demi-circumference	29.4 c.
Posterior demi-circumference	21.2 c.
Longitudinal diameter	174 m.m.
Transverse diameter	146 m.m.
Vertical diamcter	145 m.m.
Bi-mastoid diameter	127 m.m.
Bi-frontal diameter	96 m.m.
Foramen magnum to superior occipital angle	139 m.

The next specimen presents some extraordinary features. It is the skull of a celebrated negro panel-worker, confidence-operator and desperado, who, at the time of his death, was the consort of a notorious courtesan who flourished in Chicago some years ago.

FIG. 6.—Negro Panel-worker. Dolicho-cephalic.

This individual, after some years' dalliance with the law without especial harm to himself, was finally knifed in a brawl. A front view of the cranium shows the ordinary and characteristic negro facial type, with the exception, perhaps, that the bones are exceptionally massive and well-developed. Unfortunately the inferior maxilla is absent, a fact which I greatly deplore, as the general cranial development suggests to us the

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probability that the missing part presented some very interesting features for consideration. A lateral view of this cranium shows the ordinary dolicho-cephalic negro type. The cranial index is low, being 72.1. A comparison with Fig. 1, however, shows the extreme degeneracy of type in the latter to great advantage.

FIG. 7.—Negro panel-worker. Dolicho-cephalic.

A view of this skull (Fig. 7), after a section of the calvarium has been removed, shows its most interesting features. Skulls of such extreme thickness, even among negroes, are rarely met with. The consistency of the bone in this cranium is very dense and hard, and traditionally this negro, while alive, was noted for his butting propensities. Violent contact with such a skull would be apt to damage the fist of a Sullivan. Indeed, it is said that this fellow rather enjoyed the impact of a policeman's club.

I will state at this point that we are of the opinion that the massiveness of bony development in this case is not due to disease. The general character of the overgrowth, and the consistency of the bone, would seem to support this view. Syphilis may produce thickening of the cranial bones, as some of Virchow's specimens show, but syphilitic bone does not present the characters and uniformity present in this case.

At the densest part of the calvarium this specimen measured 13 m.m. in thickness, its average thickness being 11 m.m. A comparison with Fig. 9 readily shows how phenomenal the osseous development in this case is. The cranial measurements are:

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Cephalic index.....71.1
Circumference.....47.8 c.
Anterior demi-circumference.....25.4 c.
Posterior demi-circumference.....22.4 c.
Longitudinal diameter.....181.5 m.m.
Transverse diameter.....131 m.m.
Vertical diameter (vertex to foramen magnum).....128 m.m.
Bi-frontal diameter.....95 m.m.
Bi-mastoid diameter.....113 m.m.
Bi-zygomatic diameter.....126 m.m.
Anterior border foramen magnum to sup. occip. angle, 117 m.m.

The upper jaw and alveolar process in this skull is well developed, the only peculiarity being a low palatal vault.

FIG. 8.—Skull of prostitute. Dolicho-cephalic.

Fig. 8 shows the skull of a once notorious member of the Chicago *demi-monde.* She was a very tall woman, of mixed Indian and white blood. The cephalic index shows what might be inferred from the appearance of the cuts—a decidedly dolicho-cephalic type, and a peculiar outline. This specimen is the most symmetrically developed of the series, with the exception of the Sioux squaw next to be described, and whether coincidental or not, the fact remains that this subject presented a higher type of intellectuality while living than any of the other subjects embraced in this essay. The skull is nevertheless of a degenerate type, as shown by its extreme tenuity, and its markedly dolicho-cephalic index.

Fig. 9 shows the extreme thinness of the calvarium, which was at the point of section only 3 m.m. in thickness. A striking

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feature of this skull is its freedom from prominences, its surface being uniformly smooth and rounded. In this respect the specimen differs greatly from another cranium of a prostitute in the same series which we have examined, but of which unfortunately we have no illustrations. In this case there was an excessive development of the occipital bone, the enlargement being

FIG. 9.—Skull of prostitute. Dolicho-cephalic. Calvarium partially removed.

symmetrical and most marked upon the left of the median line. The right parietal eminence was excessively and disproportionately developed. The cranial index was markedly dolicho cephalic.

The principal measurements of the skull at present under consideration are:

Cephalic index.....67.09
Circumference.....51.2 c.
Anterior demi-circumference.....22.9 c.
Posterior demi-circumference.....27.3 c.
Longitudinal diameter.....190 m.m
Transverse diameter.....130.5 m.m.
Vertical diameter.....128 m.m.
Bi-frontal diameter.....88.5 m.m.
Bi-mastoid diameter.....71 m.m.
Bi-zygomatic diameter.....130 m.m.
Anterior border foramen magnum to ant. sup. occipital angle.....116 m.m.

The jaw in the case is poorly developed but fairly well formed. In regard to the extreme tenuity of the skull, I do not believe

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that it is the result of pathological change. The general lightness of the bones and the symmetry of the skull are not consistent with the existence of such bone changes as might produce absorption and thinning. The markedly dolicho-cephalic type of this skull is interesting in view of the strain of Indian blood in the subject. As has already been observed, the degenerate type in dolicho-cephalic crania is in the direction of a still lower index, and in this instance the admixture of Indian blood evidently determined the degenerative type. This observation would appear to be contradicted by the case outlined in Figs. 12-13-15. In this case, however, there was an admixture of negro and Mexican blood, with a resultant degeneracy of form in general as well as in the cephalic index. This case, in fact, partakes in some respects of the character of a teratological rather than an atavistic type *per se*—at least as far as the facial development is concerned.

A comparison of the prostitute's skull with the female Indian type next presented shows a marked difference in the cranial index, the disparity being 7.07. Even the negro in Fig. 6 is less dolicho-cephalic than this specimen.

FIG. 10—Skull of Sioux squaw. Dolicho-cephalic.

The next specimen is the cranium of a full-blood squaw of the Uncpapa Sioux, who was the wife of one of the leading malcontents in the recent Indian outbreak, and consequently of the better type of Indian development.

This specimen is exceptionally symmetrical and moderately dolicho-cephalic. Aside from points of contrast, there is

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little of interest to be said of it in connection with the present series. The subject was as intelligent as the better class of her people average, and there is nothing to be said regarding her from the moral standpoint. Indeed, as the saying goes, the shoe might be on the other foot, as the Indian estimate of the Caucasian grave-robber is not a high one, as evidenced by his treatment of the desecrator of the Indian burial-places when the latter happens to be caught. However, as my connection with the aforesaid desecration is very remote, I trust that my red brother will extend his forgiveness.

FIG. 11.—Skull of Sioux Squaw. Dolicho-cephalic.

Fig. 11 shows the same skull in lateral view. Its symmetrical outline is quite evident. The measurements are as follows:

Cephalic index..... 74.16
Circumferential..... 51.2 c
Anterior demi-circumference..... 26.6 c
Posterior demi-circumference..... 23.8 c
Longitudinal diameter.....161 m.m.
Transverse diameter.....152 m.m.
Vertical diameter .....140 m.m.
Over vertex from ear to ear.....318 m.m.
Occipital protub. to root of nose.....293 m.m.
Bi-mastoid diameter.....121.5 m.m.
Bi-frontal diameter..... 96 m.m.
Anterior border foramen magnum to superior occipital angle.....130 m.m.

The superior maxilla presents arrested development. The

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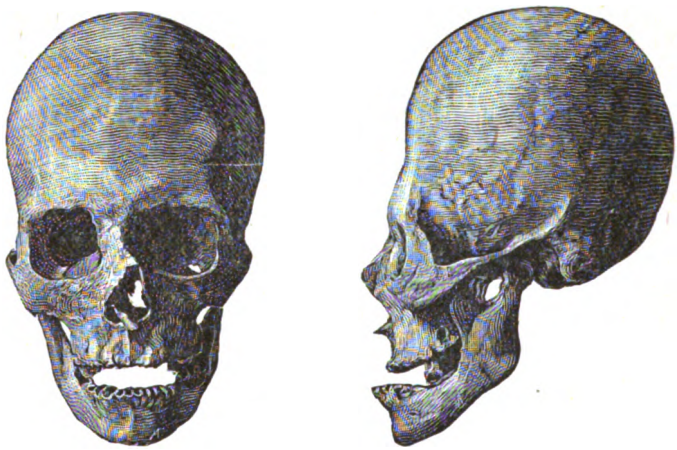
vault is of medium height, and the alveolar processes well-developed. It will be found that in the Indian, as in all primitive races, a well-formed palate and regular teeth are the rule. It would be interesting, at some future time, to study the effects of civilization of the Indian in this regard.

The next cranium which I will describe is the most remarkable of the series, and in many respects presents phenomenal characters. (Figs. 12 and 13.)



FIGS. 12 AND 13.—Half-breed Mexican and Negro. Brachy-cephalic.

The subject was a half-breed Mexican and negro, who had left Mexico—his native country—for the good of his compatriots. While he had never distinguished himself by any startling act of criminality and had managed to keep himself out of the clutches of the law, he was identified with the petty criminal class which forms a prominent portion of all social systems, and with which Mexico is especially infested. He finally died in a public hospital, as a result of some acute disease with cerebral complications. The general physique of this man was very fair, although he presented a generally overgrown and loose-jointed appearance. When alive he was a very peculiar looking specimen indeed, the dome-shaped appearance of his cranium being exaggerated by a luxuriant crop of kinky wool, several inches in length, that stood straight out from his head. From a mental standpoint he was up to the average of the negro race, but morally speaking he was

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decidedly degenerate. One of his prominent characteristics was a very irritable and irascible temper.

This cranium, as is well shown in the appended illustrations, is most markedly brachy-cephalic; indeed, its circumferential outline is almost perfectly round, its longitudinal and transverse diameters being nearly equal. The term dome-shaped is as nearly accurate as possible from a descriptive standpoint. It is a singular fact that the degenerate type of the African skull often presents the oxy-cephalic or rafter-headed type, even when the dolicho-cephalous index is pronounced. These rafter heads are often seen.

The skull at present under consideration is, as already remarked, a distinctive dome shape, which corresponds not at all with the rafter head.

The peculiar conformation in this case is evidently not the result of pathological conditions or mechanical pressure. The vault of the cranium is quite symmetrically developed, although

FIG. 14—Outline of Ancient Peruvian Skull Mechanically Deformed.

the base of the skull is decidedly asymmetrical, as will shortly be shown. We know of no mechanical means which might have caused the peculiar dome-like form of this specimen, nor have I been able to find mechanically deformed crania of a similar type. Such deformities as those presented by the Chinook or Flat-head Indians are quite familiar types of skulls mechanically deformed. Certain specimens found in ancient Peruvian graves are almost precisely identical with the characteristic Chinook type, and show a probably common origin of the two races. This type is fairly well shown by the conventional outline of Fig. 14.

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There are several interesting features in connection with the skull under consideration: One of the most striking is the extreme shallowness of the orbits. This is well shown by comparison with some of the other types already described, the measurements being one and three-quarters inches from the upper margin of the orbit to the optic foramen, while in the Indian and negro skulls in this series the orbits measure two inches in depth. The outer walls of the orbits encroach upon the cavities, giving a still more marked appearance of shallowness.

The inferior maxilla also presents some peculiarities: The coronoid processes are very small and short, the body long, and the angles very oblique. The anterior alveolar process is excessively developed. The same is true of the alveolar process of the superior maxilla, it being so situated on the outer surface of the jaw that the teeth were necessarily tipped in to facilitate occlusion with the lower teeth. The central incisors were evidently lost in early life, the alveolus being absorbed and the border of the jaw only one-eighth of an inch in thickness at this point. The palatal vault is very low, and the general development of the jaws imperfect.

There is a marked deflection of the vomer and ossæ nasi, evidently of non-traumatic origin, and due to excessive development of the osseous and cartilaginous structures of the septum nasi. The nasal spine is enormously developed. The cranial index in this case is extraordinarily high, being slightly above the maximum given by most anthropologists. The type is as marked in the direction of a brachy-cephalic index as is Fig. 1 in the direction of a low or dolicho-cephalous index.

Fig. 15 shows the inferior surface of the skull under consideration. A glance suffices to show its remarkable asymmetry. The foramen magnum is almost entirely to the left of the median line. A line drawn through the center of the foramen traverses the median line of this surface at an angle of about forty-five degrees. The center of the anterior border of the foramen is situated at 76.5 m.m. from the left, and 58 m.m. from the right mastoid. The center of the posterior border of the foramen is 64 m.m. and 61 m.m. from the left and right mastoids respectively. The margin of the foramen is extremely thin, and the

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occipital ridges very prominent. Measurements of this skull are:

Cephalic index	98.1
Circumference	46.5 c.
Anterior demi-circumference	22.6 c.
Posterior demi-circumference	23.9 c.
Longitudinal diameter	146 m.m.
Transverse diameter	143 m.m.
Vertical diameter	148.5 m.m.
Root of nose to occipital protuberance	313 m.m.
Anterior border foramen mag. to sup. occ. angle	91 m.m.
Bi-mastoid diameter	115 m.m.
Occipito-mental diameter	248.5 m.m.
Bi-frontal diameter	95 m.m.
Bi-zygomatic diameter	133.5 m.m.
Over vertex from ear to ear	350 m.m.

On comparing the longitudinal, vertical and transverse diameters of this remarkable skull with those of some of the others of

FIG. 15.—Inferior Surface of Half-breed Cranium.

the series, the relatively great height of this dome-like cranium is made very apparent. Thus the diameters are:

	Trans.	Long.	Vert.
Fig. 1	122 m.m.	196.5 m.m.	132 m.m.
Fig. 4	146 m.m.	174 m.m.	145 m.m.
Fig. 6	131 m.m.	181 m.m.	128 m.m.
Fig. 8	130.5 m.m.	190 m.m.	128 m.m.
Fig. 10	152 m.m.	161 m.m.	140 m.m.
Fig. 19	140.5 m.m.	180 m.m.	136.5 m.m.
Fig. 21	149 m.m.	168 m.m.	118 m.m.

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Those of the specimen under consideration being Trans. 143 m.m., Long. 146 m.m. and Vertical 148.5 m.m., a comparison with Fig. 21 is especially interesting.

While making some observations at the Joliet penitentiary I discovered an example of the dome-shaped brachy-cephalic cranium which strongly resembles the extraordinary specimen just described.

FIG. 16.—Dome-shaped cranium; mulatto. Brachy-cephalic.

This subject (Figs. 16 and 17) is a mulatto about twenty-three years of age, who is doing time for attempted murder. He is a surly, truculent fellow, of a low grade of intelligence, and inclined to be unruly. He is at present suffering from a mild type of syphilis. The form of the cranium is well worthy of remark, the more especially as it so nearly approximates the type shown in Figs. 12 and 13.

The facial bones, jaws and teeth in this case were extremely well developed, and the palatal vault normal. There was no history of mechanical compression, and as the subject was born in Tennessee such a cause is improbable, if not impossible. The measurements were not complete. As far as taken they were:

Cephalic index.....76.7
Root of nose to occipital protuberance over vertex....39.5 c.

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Transverse diameter.....145 m.m.
Longitudinal diameter.....191 m.m.
Circumferential.....50.8 c.
Occipito-frontal diameter..... 59 m.m.
Occipito-mental diameter..... 28.5 m.m.

The dome-like form of this cranium will be more evident on comparison of the two principal measurements with those of a skull of average development. A comparison was made with that of one of the white orderlies in the prison hospital, a man of fine

FIG. 17.—Dome-shaped cranium; mulatto. Brachy-cephalic.

physique and good cranial development. It was found that while the measurement over the vertex was the same as that of the negro, 39.5 c., the circumferential measurement was 58.5c.

The next specimen (Figs. 18, 19, 20) is the skull of a noted Western criminal and desperado, who was lynched for train-wrecking in Wyoming, a number of years a go. The conduct of this man during the progress of the lynching stamped him as a bravo of the most hardened type. An attempt was made to induce him to relate the particulars of a murder in which he had participated, the wife of the murdered man being present at the hanging, and anxious to learn the details of her husband's death. To the persuasive efforts of the "regulators," and the

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tears and entreaties of the widow of his victim, he replied: "D—n it, you'll hang me if I tell, and you'll hang me if I don't. So here goes;" saying which he deliberately kicked the barrel upon which he was standing out from under himself and thus saved his self-appointed executioners all further trouble.

FIG. 18.—Skull of Western desperado. Sub-dolicho-cephalic.

This specimen is sub-dolicho-cephalic and chiefly characterized by its marked asymmetry.

FIG. 19.—Skull of Western desperado. Sub-dolicho-cephalic.

The occipital region in this cranium is excessively developed, prominent and bulging, being especially prominent on the left of the median line. The occipital protuberance is situated about 8 m.m. to the left. The parietal eminences are very asymmetrical, the right being very prominent and of irregular contour. The palatal vault is of medium height, the teeth regular and the maxilla well developed. The measurements are:

Cephalic index	77.8
Circumference	50.3 c.

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Anterior demi-circumference	21.9	c.
Posterior demi-circumference	28.6	c.
Transverse diameter	140.5	m.m.
Longitudinal diameter	180	m.m.
Bi-frontal diameter	105	m.m.
Bi-mastoid diameter	126	m.m.
Bi-zygomatic diameter	134	m.m.
Root of nose to occipital protuberance	312	m.m.
Over vertex between auditory meati	327.5	m.m.
Foramen magnum to sup. occipital angle	128	m.m.

FIG. 20.—Skull of Western desperado. Sub-dolicho-cephalic.

Viewed from above (Fig. 20), this cranium shows a fairly symmetrical outline. The above illustration is used for the purpose of comparison with Fig. 23.

The next specimen (Figs. 21, 22, 23) is by far the most interesting of the series from the standard of degeneracy, and is certainly the most markedly asymmetrical. If it were possible to conceive of a special criminal type of cranium, this would in many respects be an ideal illustration. The subject was a noted Western desperado and train-wrecker, who was lynched at Carbon, Wyoming, back in the seventies, for an attempt to wreck a train at Medicine Bow. In this attempt he was assisted by the individual represented in Figs. 18, 19, 20.

The extremely disproportionate breadth of this cranium is well shown by the above illustration. The meagre development of the frontal region is very noticeable. On viewing this skull from

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above, the peculiar twisted appearance which may be observed in connection with the cranial type of the criminal in general will be observed. The orbits are relatively large, and the face as a whole of a decidedly "squatty" appearance. The absence of the inferior maxilla is to be regretted, although, considering the vicissitudes which the skull has experienced, its otherwise perfect state of preservation is rather remarkable. After the lynching of this gentleman the body was buried in a hastily improvised and shallow grave, from which it was very promptly resurrected by

FIG. 21.—Desperado and train-wrecker. Extreme Brachy-cephalic.

those scavengers of the prairie, the coyotes. The skull was finally found by a railroad employé, and subsequently used as a paper-weight for some years.

Judging from the conformation of the cranial and facial bones the lower maxilla, while probably well, or perhaps excessively developed, was without doubt asymmetrical. The relatively defective frontal development of this skull is its most striking feature when viewed in its anterior outline, and is best shown by comparison with Figs. 1, 2, and 6. In the former the extreme breadth is 122 m.m., and the extreme length 196.5 m.m., while the frontal breadth is 95 m.m. In the skull under consideration, however, although the extreme breadth is 149 m.m. and the extreme length but 171 m.m., the frontal breadth is only 90 m.m. The great disproportion in the measurements is at once obvious. In Fig. 6 the greatest breadth is 131 m.m., and the greatest length 181.5 m.m., yet the transverse frontal diameter is 95 m.m.

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The disproportion is not compensated for in Fig. 21 by an increased longitudinal development of the frontal bone.

The twisted appearance of this skull is most evident on comparison of the parietal eminences. These are very prominent on both sides, the left being much the larger of the two. The occipital region is greatly deformed and exceptionally prominent, the bulging being most marked upon the left of the median line. The asymmetry of development is shown by a comparative measurement of the distance of each parietal eminence from the occipital protuberance. This measures on the right side 132 m.m., and on the left only 119 m.m. The squatty, animal-like

FIG. 22.—Desperado and Train-wrecker. Brachy-cephalic.

type of this cranium is shown by a comparison of its vertical measurement with some of the others of the series. From the highest point at the vertex to the anterior border of the foramen magnum, the measurement is 118 m.m. That of Fig. 2, which is so distinctively anthropoid in its development and outline, the vertical measurement is 132 m.m.; of Fig. 5, a symmetrical brachy-cephalic type, is 145 m.m.; of Fig. 6, 128 m.m.; of Fig. 10, 140 m.m.; of Fig. 13, 148.5 m.m. and of Fig. 19, 136.5 m.m. A little study of these measurements will show the extreme animality of type in this cranium, even as compared with others of a pronounced degeneracy of type.

Viewed from above, Fig. 23 shows the circumferential outline of this specimen. By comparing the quadrants of this illustration, the pronounced asymmetry of development is easily seen.

The superior maxilla in this skull is well developed, although

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the alveolar process shows an inferior development. The palatal arch is exceedingly low. The left superior maxilla is much smaller than the right. The palatal processes show great

FIG. 23.—Skull of Western Desperado. Brachy-cephalic.

asymmetry, the right being 16 m.m. and the left but 5 m.m. in breadth. The measurements of this cranium are:

Cephalic index	87.13	
Circumferential	49	c.
Anterior demi-circumference	20.35	c.
Posterior demi-circumference	28.65	c.
Longitudinal diameter	171	m.m.
Transverse diameter	149	m.m.
Vertical diameter	118	m.m.
Bi-frontal diameter	90	m.m.
Bi-mastoid diameter	108.5	m.m.
Bi-zygomatic diameter	132	m.m.
Vertical circumference from ear to ear	279	m.m.
Center of left parietal prominence to occipital protuberance	119	m.m.
Center of right parietal prominence to occipital protuberance	132	m.m.
Anterior border foramen magnum to superior occipital angle	128	m.m.

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[*For Discussion see Society Proceedings.*]

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THE ÆTIOLOGY OF CARCINOMA.

By HENRY G. ANTHONY, M.D.

Demonstrator of Skin Diseases in the Chicago Policlinic.

The chief clinical observation which gave rise to the thought that carcinoma might be an infectious disease, and which caused bacteriologists to endeavor to find a pathogenic microörganism which would produce the disease in lower animals, was the manner in which dissemination sometimes occurs.

Years before microörganisms were studied Virchow called attention to the fact that at times this neoplasm seems to spread from one location to another by inoculation. As an example he cited cases of carcinoma of the stomach and intestines, which, starting from the mucous membranes of these organs, extend to the surface of the peritoneum, and then, instead of secondary deposits occurring in the neighborhood of the primary growth, they are found in the cul-de-sac of Douglas, or on the peritoneum between the vagina and bladder, making the impression that material from the primary tumor had broken off and fallen into these lower folds of peritoneum and there produced the second growth.

Von Bergman observed a man, sixty-six years old, who had an epithelioma of the lower lip, when it began to ulcerate. After existing six weeks a second epithelioma appeared on that portion of the upper lip which came in contact with the ulcerating surface of the one on the lower lip.

This case is certainly very suggestive of extension by direct contact.

The case of Klebs, where he found a primary carcinoma of the gum of the superior maxillary bone, and secondary of the œsophagus and stomach, and the cases observed by Kraske and Verneuil, where primary carcinomata were located in the rectum six or eight inches above the anus and secondarily near the sphincter ani, are analagous, as are also those cases where secondary deposits have been known to appear in the wound made by a trochar introduced into the peritoneal cavity for the

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evacuation of ascetic fluid in cases of malignant disease of some abdominal organ. Other examples of extension by inoculation might be given.

In some cases dissemination occurs through the blood vessels and lymphatics in a manner exactly resembling tuberculosis, as in those rare cases of so-called miliary carcinomata where the patient has fever, disturbances of digestion and circulation, quickly dies, and the post-mortem discloses miliary carcinomatous nodules which can only be distinguished from tuberculosis by aid of the microscope. With the present state of our knowledge we can only explain such cases on the supposition that material capable of producing the disease, and sufficiently minute in size to pass the lung capillaries, has gained entrance to the general circulation and found lodgment in various parts of the body.

Chimney-sweeps cancer of the scrotum, Paget's disease of the breast, if we agree with Kaposi that it is not a special form of inflammation of the skin, senile warts, which, after being treated by strong caustics, become carcinomatous, and on that account were called "noli me tangere" by early French writers, could be explained by supposing that the carcinoma which develops was produced by a pathogenic microörganism finding lodgment on a simple chronic dermatitis.

Cases are mentioned which show that a secondary carcinoma may be produced by an embolus, as one observed in Gerhardt's clinic. A man, whose family history was good, and who had always enjoyed good health with the exception of having had symptoms of indigestion for some time previous to his entrance into the hospital, on attempting to lift a heavy weight, suddenly felt a sharp pain in the region of the liver; he became unconscious and was brought to the hospital. At first nothing could be found to explain his condition; but he soon regained consciousness, and in two or three days a slight enlargement of the liver was noticed, which increased rapidly, his pulse became rapid, he had no appetite, there was no fever and no enlargement of glands in any part of the body. Gerhardt expressed the opinion that the patient had a primary carcinoma of the stomach and a secondary in the liver, through a portion of the primary growth having been carried to the liver by way of the portal vein.

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The glands above the clavicle were not enlarged. Had they been the diagnosis would have been easier, for Virchow has shown the tendency of the glands above the clavicle to enlarge in carcinoma of abdominal viscera. The rapid pulse without fever Gerhardt explained on the supposition that the glands of the neck situated over the pneumogastric nerve had enlarged and were pressing on that nerve. Had they pressed on the recurrent laryngeal nerve they would have caused paralysis of one of the vocal cords. Had they pressed on the sympathetic nerve they would have caused dilatation of the pupils. Post-mortem examination confirmed the diagnosis.

The fact that the lymphatic glands adjacent to a carcinoma enlarge and become carcinomatous shows that the lymphatics have absorbed either cells, microörganisms, or something else capable of producing the disease. The mere fact that this absorption occurs gives us no clue to the size or character of the object absorbed, for it is known that cells may pass through lymphatic vessels, and some authors claim even through lymphatic glands, though Virchow denies that they ever pass the glands.

Coloring matters used in tattooing which are not soluble in the serum of the blood are nearly always to be found in the glands adjacent to the tattoo mark. The particles of these coloring matters are heavy, relatively speaking, but smaller than a white blood corpuscle.

If carcinoma can be conveyed from the primary tumor to neighboring glands it is reasonable to suppose that it could be produced by inoculation, and we find that eminent surgeons have endeavored to inoculate the disease into persons and lower animals during the past hundred years. Hahn, in considering this subject (*Berlin klin. Wochenschrift, No. 21, 1888*), states that Dupuytren tried in vain to accomplish this, and many others after him made similar experiments. In all these investigations made prior to the days of antiseptic surgery suppuration occurred and prevented the success of the inoculations. Longenbeck was the first who claimed success. He injected the so-called cancer juice directly into the jugular vein of a dog, and two months afterwards found two carcinomatous nodules the size of a pea in the animal's lungs. Inasmuch as the histological structure of carcinoma was unknown

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at that time, and as such a man as Virchow, who was then studying the question, doubted the correctness of his observation, it can hardly be regarded as a successful inoculation, especially as it has never been repeated.

Billroth, Albert and Sänger are modern experimenters in this direction who have not been able to produce the disease. The only recent author with whom we are acquainted who claims success is Hahn of Berlin. He transplanted carcinomatous nodules from one location to another and observed them grow, but when closely questioned by Virchow admitted that sound skin was left attached, which caused Virchow to exclude the case as a successful inoculation, the same as transplantation of a piece of skin containing a hair could not be regarded as a successful transplantation of a hair. The practical conclusion which Hahn draws from his experiments is that care should be taken during operations for the removal of carcinomata not to allow any instrument which may come in contact with the diseased tissue to afterwards touch the edges of the wound, as it might inoculate them.

Possibly this is the explanation of those cases where it has been noted that secondary nodules appear in the scar of the incision a few weeks after the operation, even where care was taken to make the incision through healthy skin, and where no enlargement of the glands existed.

Bacteriological Investigations.—Although several French writers had attempted to find a specific microörganism in cancer their investigations attracted but little attention in comparison to those of Scheurlen (*Berlin klin. Wochenschrift, No. 49, 1888*), who made cultures from ten cases of carcinoma of the mammary gland. His cultures were made in serum taken from the pleural cavity, which he sterilized during five days and caused to coagulate by heat on the sixth day. The fluid thus prepared was inoculated with cancer juice taken from the center of the tumors under the strictest antiseptic precautions, after which the test-tubes were placed in an incubator. On the third day, and sometimes earlier, the surface of the coagulated serum became coated with a growth which he found to be bacilli.

They moved and could be easily stained with all kinds of staining fluids; the staining could be removed by alcohol. He could not find them in sections of the tumors, but he did find

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their spores. They were to be distinguished from other bacilli by the color and manner of growth. They were seldom found singly, but generally in groups. They could not often be cultivated on agaragar or gelatine. They grew best on potato.

He inoculated six dogs with a pure culture of these bacilli. After four days a tumor the size of a walnut appeared at the seat of inoculation in each dog. These tumors were soft and not circumscribed. Within one month he killed two of the dogs and found a hard tumor in the fat tissue of the mammary gland where the injection had been made. Microscopically he found, cell proliferation and large granular cells which were partially epithelial in character, and in which spores of the bacilli were to be seen. He therefore concluded that these bacilli were the cause of carcinoma.

At the time he promised to report on his final observations made on the four dogs which he had preserved, but we are unable to find reference to any such report. In the discussion which followed the presentation of this paper Guttman stated that he believed that Scheulen had really discovered the cause of carcinoma and expressed surprise that this discovery should be made at this late date.

A. Fraekel did not believe that a bacillus which grew so rapidly and in the manner in which this one did could be the cause of carcinoma.

In the following year, 1888, Sänger repeated these experiments, and was unable to find the bacillus in carcinoma, but did find it in potatoes, and therefore he concluded that it was a potato-bacillus, which idea has since been concurred in by others.

Since that time numerous articles have been written on the subject, but no facts of material value added to our knowledge.

353 North Clark Street, Chicago.

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SURGICAL RESTORATION OF THE DESTROYED FEMALE URETHRA.

A CLINICAL LECTURE

By ALBERT HEYDENREICH.

Dean of the Medical Faculty of Nancy.

Translated from the Semaine Medicale of March 11th, 1891, for the Chicago Medical Recorder.

Generally surgical works are mute regarding the destruction of the female urethra, and its proper treatment, yet rare observations relative to the subject exist in literature. They have been recently collected in an important monograph by Froelich (*Destruction totale de l'Urèthre chez la femme. Causes et traitment. Thèse de Nancy, 1891*). The starting point for this work was a case in my service, which I will rapidly detail.

In April, 1890, a young woman of twenty-one years presented herself with complete rupture of the urethra and a notable tear in the base of the bladder. This lesion resulted upon the extraction of a vesical calculus made a year before through the urethral canal by a surgeon. The calculus measured four and a half centimetres in diameter, and had developed about a hair-pin which the patient had introduced into the urethra and allowed to slip into the bladder. The extremities of the pin projected from the stone about two and a half centimetres. There was complete incontinence of urine. The tear had opened the posterior wall of the urethra its entire length, extended to the neck of the bladder, and even to the base, so that one could readily introduce three fingers into that viscus.

I attempted at first, after freshening the lips of the rent, to suture them and thus reconstruct at once the base of the bladder and the urethra, but three successive operations undertaken in this way gave no result save the narrowing of the bladder-opening so that it allowed the passage of a single finger, and was situated at the vesical neck. In the recumbent position the patient now retained a little urine, but in the erect attitude incontinence was complete. In July the woman left the hospital wearing a urinal, which afforded her but scant assistance.

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Later, I decided to make further attempts, and recalled the patient to the hospital in April, 1890. It was my intention to make two operations, at intervals; first, I counted upon re-establishing the urethra, and second, I proposed to close the orifice, which would separate the new urethra from the bladder.

The first operation was undertaken May 5th, under chloroform anæsthesia, which I had also used in the former operations. I freshened the borders of the urethral gutter carrying out the denudation upon the vaginal wall. Some difficulty was encountered in bringing the bleeding surfaces into contact; four silver sutures having been introduced, I could twist but the three lower ones, contact of the parts at the fourth not being attained. The operation resulted in a notable narrowing of the vagina, and it is to be noted that the woman had never borne children. Union took place nicely, but, owing to difficulties I will shortly describe, the reconstructed urethra was but a centimetre and a half long.

The second operation was done June 9th. I placed the patient in the genu-pectoral position, and did not use chloroform, contenting myself with cocainizing the parts. To bring together the lateral borders of the opening which existed between the bladder and urethra was out of the question, but by drawing down the vesico-vaginal partition one might attempt the suture of the upper and lower margins. This I essayed, taking care to leave an orifice in the middle of the line of sutures in the position of the urethra, as I feared to compromise the existence of this thin-walled canal by passing the wires through it. This operation failed totally; the bladder was strongly drawn upward, and the traction caused all the sutures to cut out.

I undertook the same operation July 9th, under chloroform, and with the patient in the dorsal position. Modifying the proceeding somewhat, I seized the vesico-vaginal septum with a forcep, and, drawing it down, incised it from below upwards at each lateral extremity of the vesical orifice, thus obtaining a vesico-vaginal flap broadest at its base. I drew this flap down to the newly-formed urethra, and, after the necessary freshening, sutured it to the anterior vaginal wall, to the right and left of the location for the urethra, and left a small fistula at the middle point. Three silver sutures were used on each side, and a supplementary suture to bear the strain and prevent retraction

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was passed from the middle portion of the flap and attached to the right thigh. This operation partially succeeded. On the right side the sutures held well, but on the left were loosened, yet the flap retained its new position and future success seemed assured.

On the 19th of November I successfully sutured the left margin of the flap to the corresponding portion of the anterior vaginal wall, and there remained to be closed only the fistulous opening which I had intentionally left in the middle line between the flap and the urethal canal, in order to avoid traction upon the thin-walled, newly constructed urethra. On the 10th of December I closed this opening and left a No. 12 Nelaton catheter in the canal for the first few days.

From the plastic point of view the success was complete, but the incontinence of urine persisting, I determined to extend the urethra forward. To the right and left of the median line upon the labia minora I made a longitudinal denudation and sutured the fresh surfaces in such a manner as to prolong the urethra from the meatus to within less than a centimetre of the glans-clitoridis, and left a No. 14 Nelaton catheter in the bladder through the newly formed canal. This operation, done in January, left a slight fistula in the track of the new urethra which required two operations, February 9th and 27th, to successfully close.

At present the woman holds her urine perfectly for three or four hours when recumbent, at the end of which time she feels the need of urinating, and empties the bladder with a very fair stream. She also retains her urine when sitting, but the water passes from her as soon as she stands up. Thanks, however, to the length of the urethral canal, which is about six centimetres, and to its horseshoe shape, or course, embracing the inferior border of the symphasis pubis, it is easy to control the incontinence by pressing the urethra against the pelvic bones by means of a special instrument known as the Trelat compressor. This instrument consists in a girdle carrying a pad in front in the middle line, from which a spring concave posteriorly terminates in a small ivory button intended to compress the urethra. A special arrangement enables the wearer to relieve the pressure for micturition.

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Froelich, in studying the operations which purpose the repair of the destroyed female urethra, divides them into six groups.

The operations of the first group, which number those of Freund, Schroeder, and Pozzi, have as a common object the restoration of the inferior wall of the urethra with the tags and remnants, either by freshening and suture of the borders of the rent, or by replacing the urethro-vaginal septum detached by some traumatism. In the first instance the pedicle of the flap may be attached near the meatus or about the vesical orifice.

In the second series (Lawson, Tait, Emmet, Lücks) the inferior wall of the urethra is restored with flaps taken from the vagina. The simplest method of procedure is then the following: From each side of the urethral groove a flap embracing the vaginal mucus membrane is lifted and the two flaps are sutured by their free margins over a catheter.

The third group of Froelich embraces the operations which utilize in the restoration of the urethra a flap from the vesico-vaginal septum. Sometimes, as does Schroeder, and as I have myself done, the surgeon takes a flap from the entire surface extent of the septum, and sometimes is content, after the method of Freund, to draw down the vaginal portion of the septum, to incise both sides of the salient fleshy tubercle and to suture this flap to the freshened edges of the urethral gutter.

In a fourth group of operations the inferior wall of the urethra is restored by a flap taken from the labia minora. Fritsch detaches one of these labia from below upwards as far as the clitoris, places it over the urethral groove and sutures it in position, forming a canal open at each extremity. By a subsequent operation the posterior extremity is made continuous with the bladder. Polaillon, in a case of hypospadias, sutured the free borders of the labia minora, and when the canal thus formed was solidly united he drew it backward and attached it to the margin of the vesical opening.

By these various means the surgeon attempts to reconstruct a urethra more or less unlike the normal aqueduct, but having the regular functions of the urethra. Proceedings have been devised by which, renouncing the formation of a urethra, it has been sought to control the incontinence of urine in another manner. Among these some preserve the vagina and others

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sacrifice it; hence two varieties of operations form the fifth and sixth groups of Froelich. These methods propose closing all communication between the bladder and vagina, and the formation of a new route for the urine by the establishment of an easily controlled fistula. Emmet and Baker Brown have made sub-pubic fistulae passing between the old urethra and the symphysis pubis. Rutenberg has advised the establishment by preference of an hypogastric fistula. It is possible to close these passages by means of some special compressing appliance, and Baker Brown employed in the sub-pubic fistula a permanent catheter.

The operations of the sixth group sacrifice the vagina. Jobert de Lamballe and Rose have advised the formation of a recto-vaginal fistula and the closure of the vagina. Kidd made a different operation; he sutured the walls of the vagina together, obliterating it the entire length, but left a long and narrow canal to replace the urethra and to give exit to the uterine discharge.

Let us now examine the value of these different methods and the results they furnish.

That the methods which renounce the formation of a urethra are not to be employed but as a despairing effort is beyond question. Among these the occlusion of the vagina after the formation of a recto-vaginal fistula should be absolutely condemned. This operation, it is true, has been done many times with success, but in other cases the establishment of a cloaca in which urine, fecal matter, and menstrual blood are mixed and lodged has caused inflammatory troubles so severe as to require the reopening of the vagina. When the reconstruction of the urethra is judged to be impossible, one must choose between the operation of Kidd and the occlusion of the bladder with the formation of a sub-pubic or hypogastric fistula. Kidd's operation has the disadvantage of obliterating the vagina, and the establishment of a sub-pubic or hypogastric fistula is preferable. These operations do not suppress the incontinence of urine, but enable the patient to control it by means of suitable appliances.

Whenever possible it is preferable to attempt the reconstruction of the urethra, and one operation is not to be recommended to the exclusion of others. Simple suture of the borders of the rent or the bringing into place of the traumatically detached urethro-vaginal septum are proceedings having the merit of

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simplicity and of accomplishing a result very close to the physiological state. When they are impossible, or fail, resort to the flaps taken from the vaginal walls or vesico-vaginal septum may be tried, and the labia minora utilized exceptionally. It must be mentioned that the operation by vaginal flaps often results in a notable narrowing of the vagina.

There is no objection to the combination of many methods in the same case. In the instance related I restored the lower portion of the rent by simple suture, while the rest of the tear was restored by a flap from the septum, and finally I lengthened the urethra forward by means of the labia minora. Moreover, I made eleven operations altogether. It was my intention to operate by stages, for this method of procedure constitutes one of the most important elements of success, but many of my operations failed completely or only partially succeeded. A similar multiplicity of operations is found in the records of others. Some patients have remained under treatment seven or eight years, undergoing surgical interventions one after another. Generally they are desirous of being rid of their infirmity at any price, and readily submit to any operative interference, however painful.

The final result of these operations is far from always being perfect. If by perseverance the urethra be restored, cessation of incontinence is not a necessary sequence of the operations. A certain number of those operated upon have been cured of their incontinence, providing micturition be frequently performed. Others retain the urine only in the lying or sitting position. The absence of a sphincter explains perfectly the persistence of this trouble. When in spite of all attempts incontinence persists, recourse is had to some special apparatus like the compressor of Trelat, already mentioned. Its application is facilitated when the urethra terminates in front of the symphysis, so that the canal is compressed between the instrument and the pubis. Thanks to this slightly troublesome appliance, the patient is freed from a great infirmity. Even when operative interference only results in permitting the use of the compressor, signal service has been rendered the unfortunate patient.

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A NEW OPERATION—CIRCULAR EXCISION OF THE FEMALE URETHRA.

By JACOB FRANK,

Surgeon to the St. Elizabeth and Cook County Hospitals, Chicago.

Read before the Chicago Medical Society, April 20th, 1891.

During the ablation of a urethral carnucle, or vascular tumor, where the whole circumference of the urethra was involved, it occurred to me that it would be possible to make a circular excision of the diseased mucus membrane, and dissect this membrane up, from without inwards, sufficiently to allow of easy approximation of the cut end to the edge of the meatus, and to secure it by stitches.

Being put into practice, it was found to be entirely feasible. I will relate the following case:

Mrs. C. S., German; aged fifty-eight; married; housewife; Has always enjoyed a fair state of health, suffering no greater inconveniences than somewhat obstinate constipation and sick headaches, which were likely due to her excitable nature and nervo-sanguine temperament. She underwent no serious illnesses that can be remembered. Patient has had four children, and passed through the different childbirths without unusual suffering, and made each time an easy and good recovery. Menopause became established during the forty-fifth year. At about this time there was occasional discomfort upon urinating, patient being compelled to void urine oftener than usual, the external parts about the meatus being hypersensitive to the touch. This condition of things, after the lapse of considerable time, became gradually worse, the pains radiating to the back, hips, and thighs, the suffering being at times extreme, and aggravated by standing or moving about. Coition became so painful as to forbid its exercise.

Medical advice was sought without giving lasting relief. After twelve years of suffering she presented herself for examination. Inspection of external genitals revealed a tumor of dark cherry-red color between the labia minora. Opening the labia, it was found

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that the growth, which was sessile, occupied the greater part of the vestibule. It was about the size of a horse-chestnut, being thickest about the meatus. It involved the vestibule posteriorly to the vaginal border, anteriorly half the space between the clitoris and meatus, and laterally extended almost to the border of the small labia.

Upon palpation of the body, extreme pain was evinced by the patient, the parts about not being hypersensitive. The finger in the vagina, pressing against the urethra, caused no pain, excepting near the meatus.

The tumor was removed by scissors and curette, and the whole tract cauterized by stick nitrate of silver. Rest in bed for a week, then allowed to get up. At end of second week the parts were practically healed over, and patient freed from her old suffering.

The third week after removal of the tumor, it was noticed that the growth was being renewed, and during the week following it had spread over a considerable surface about the external meatus. Although there was much pain, yet it was less than at first. The proposition to again operate was accepted by the patient.

Ablation was begun by incising with scissors the border of the growth, and gradually carried upwards, dissecting out the whole calibre of the urethra to a distance of nearly one-half to five-eighths of an inch. The urethra was removed only up to a point where it was healthy; it was further loosened, so that it could be sewed to the edge of the meatus. This was done with six or eight silk stitches. No cauterization was made. The stitches were removed in five or six days, and the patient made a good recovery in eight or ten days. She was again relieved from the suffering, and returned home. No incontinence followed the operation.

Circular excision of the urethra can be practiced with safety; and, when the neck of the bladder is not injured, incontinence will not follow. In recurrent growths, I think there will be a longer interval of freedom from return, if not a permanent cure, when the growth is dissected out with a safety-border of healthy mucus membrane.

Caruncles or vascular tumors could be treated in this way. Malignant growths, a number of which, with primary seat at the

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meatus, are reported, could in this way be radically extirpated. For prolapse or saculation of the urethra circular excision would be the ideal method of cure.

17 Lincoln Avenue.

THE CHLORIDE OF GOLD AND SODIUM IN DIABETES MELLITUS.

By J. A. ROBISON, A.M., M.D.
Professor of Materia Medica and Therapeutics, Woman's Medical College, Chicago, etc.

The ætiology of diabetes mellitus remains a mystery. Theories as to its causation are numerous. A theory that the writer has not yet heard advanced is that it is a microbic disease, dependent upon tuberculosis. In accordance with this theory I have treated, with perfect success to this date, two cases by the administration of the chloride of gold and sodium in connection with the customary dietetic regimen.

Case I. L. T., æt. 52, a commercial traveler, married, no hereditary or specific disease, but a steady, moderate drinker and gourmand, weight 203 lbs., height 5 feet 11 inches. Health has been good with the exception of occasional attacks of colic. One year ago he noticed he had to urinate very frequently, arising from six to ten times each night, and passing about three quarts daily.

Urinalysis: Urine, color rain water; specific gravity 1040; sugar by Haines' test.

Treatment: Anti-diabetic diet, Budai Imperial wine, and five minims of chloride of gold solution, representing a dose of $\frac{1}{30}$ grain three times daily, gradually increasing dose until physiological action appears.

Repeated urinalysis during a period of eight weeks demonstrated a steady decrease of sugar until it became normal, and has remained so to date. Specific gravity 1019.

Case II. Mrs. F., æt. 50, Irish widow, height 5 feet 1 inch, weight 199 pounds. A rheumatic subject. Has undoubtedly had diabetes mellitus for ten years, but a urinalysis was never made until four months ago.

Urinalysis: Color clear, odor sugary, specific gravity 1038, Haines' test; urinates from six to ten times at night; severe

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pruritus vulvæ; has excruciating pain in left heel, and ankles swollen at night.

Treatment: Dietetic, no wine, and codeina, antipyrine, Cleman's solution of bromide of arsenic, et cetera ad nauseam. A few weeks ago began chloride of gold and sodium treatment. Through a misunderstanding the patient took the salt in such rapidly increasing doses, and for so long a period, that she was salivated. At length she sent me a specimen of urine, and it was free from sugar; specific gravity 1020; no polydipsia or polyuria. To date no reappearance of sugar in urine in either case.

Is diabetes mellitus a microbic disease? is it due to tuberculosis? and is the chloride of gold and sodium a specific?

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REPORT OF A CASE OF EXTRA-UTERINE PREGNANCY, WITH EXHIBITION OF SPECIMEN.

By E. C. DUDLEY, M.D.,

Professor of Gynæcology, Chicago Medical College, etc.

Presented to the Chicago Medical Society, April 20th, 1891.

I have recently made two operations for extra-uterine pregnancy past term with dead child. Both patients came from the same neighborhood in the country. Both operations were performed in exactly the same manner. The first patient made an uneventful recovery. The second case I will now report, with specimen:

The patient was sent to my service at St. Luke's Hospital, February 10th, 1871, by Dr. Charles G. Ives, of Pecatonica, Illinois. Two weeks before this there had been the usual attempt at labor which occurs in extra-uterine pregnancy, and a cessation of fœtal movements. On admission, there was placental souffle, but no fœtal heart-beat.

I advised the operation to be deferred until cessation of placental circulation, unless some urgent indication to the contrary should occur. But a few days later positive evidences of suppuration rendered immediate operation imperative, which was done February 24th, 1891.

Incision five inches long through abdominal wall on outer margin of left rectus. Adventitious uterus adherent to anterior abdominal wall, and entered without opening peritoneal cavity. One or two quarts of purulent fluid gushed out, and the fœtus was exposed, which I seized by the feet and rapidly delivered. The head was directed upward, the breech downward—the face looking toward the sacrum, and the back toward the anterior abdominal wall. In the delivery the adhesions were slightly broken, and an opening one inch long was made into the abdominal cavity. I think, however, that no fluid escaped from the sac into the abdominal cavity. This opening was tightly closed with a continuous catgut suture, the cavity which had contained the fœtus washed out and packed with iodoform gauze. The wound

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was closed in the usual way. The operation lasted twenty minutes.

At the commencement of the operation, pulse 88; temperature 99.5°. A few minutes after the operation, pulse 118, and of good quality. It rapidly rose, however, to 146, with evidence of severe hæmorrhage. I removed the dressings, reopened the wound and packed the cavity as tightly as possible with iodoform gauze saturated with a solution of subsulphate of iron. The patient was already so exhausted from hæmorrhage that I did not dare to attempt any further operation. For half an hour the dressings remained dry, but they soon became again saturated, the pulse rose to 170, became imperceptible, and the patient died six hours and a half after the operation, of hæmorrhage.

An autopsy could not be obtained, but in removing the gauze packing, which was done in the course of preparation for burial, I found that the hæmorrhage came from a little detachment of the placenta. This time I was able to pass my fingers through the opening, which had been closed by a continuous catgut suture, into the peritoneal cavity, and found that the connections of the adventitious uterus with the pelvis were very intimate and very extensive, embracing at least the lower half of the sac. These connections were not the result of adhesions, but were developmental; so that the removal of the sac would have required, not an extensive breaking up of adhesions, but an amount of dissection which would probably have destroyed the patient on the operating table.

This discovery quite justifies the original operation of leaving the sac, instead of attempting the other procedure of its removal, which is undoubtedly to be preferred when practicable.

The child was quite low in the pelvis—low enough to have been removed through the vagina; but the statistics of that method show a mortality about three times as large as the mortality of the abdominal operation. Besides, the placental circulation had not ceased, and this would have rendered the vaginal operation extremely hazardous.

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[*For Discussion see Society Proceedings.*]

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Medical Advancement.

INTRABRONCHIAL INJECTIONS IN PULMONARY PHTHISIS.

Dr. Giulio Masini has made experiments (*Gazetta degli Ospitali*, January 7th, 1891) as to the possibility of injecting medicinal substances directly into the bronchi, and has satisfied himself that it can be done. He uses for the purpose the barrel of an ordinary syringe to the distal end of which is fixed a catheter, with the usual laryngeal curve, which can be pushed out or drawn in as may be required. The liquid used was a twenty per cent. solution of olive oil, filtered and sterilized, and creasote. This is injected into the trachea or into one or other bronchus by passing the catheter through the glottis from the mouth. Auscultation by an assistant, while the liquid is being injected, enables the operator to know whether the medicament is reaching its destination. The experiments were made in Professor Maragliano's clinic, at Genoa, on five men and one woman suffering from various degrees of pulmonary disease—from catarrhal bronchitis with doubtful signs of tuberculosis to the gravest form of phthisis, with infiltration of both lungs, cavities, etc. In two of the cases in which on admission there were signs of disease at the apex, with night sweats and wasting, the effect of the treatment was very remarkable. After injections of the solution every day for a month (increasing gradually in amount from one to four cubic centimetres) the physical signs disappeared "completely" in one case, and "all but completely" in the other. Both of them gained considerably in weight. In one of the remaining cases the treatment had to be discontinued almost immediately, on account of the extreme sensibility of the larynx and the indocility of the patient. In the three others, daily injections (of four, five, eight, up to ten cubic centimetres) were given during three months and a half; in two of them a "notable result" was obtained, the expectoration ceasing almost entirely, the diseased area in the lungs becoming much smaller and the patients gain-

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ing weight and feeling better. In the fourth case the disease remained stationary, but the daily amount of expectoration diminished by eighty grammes, and there was a slight gain in weight. Dr. Masini thinks these results sufficiently encouraging to warrant further trial of the method.

MICROBE OF LEUKÆMIA.

MM. Kelsch and Vaillard (*Annales de l'Institut Pasteur*, Tome iv, No. 5, May 25th, 1890) give the result of careful observations on a case of acute leukæmia with numerous lymphomaotus growths in the subcutaneous connective tissue and in the bones, with enormous hypertrophy of the glands at the hilum of the liver. The patient was a soldier, aged twenty-four, who died with the characteristic symptoms of the disease—extreme weakness, tumors, enlargement of the organs and hæmorrhage. Even during life a few short bacilli were found in the blood, and a drop of blood inoculated into broth and incubated gave pure cultivations of the same bacillus. A second examination gave negative results. All the organs and glands were enormously enlarged; there were small hæmorrhages in the intestine and in the lungs; the humerus of one side was fractured and the red marrow was enormously increased; some of the ribs were also fractured. From the blood and from one of the tumors bacilli identical with those found during life were obtained by cultivating in broth, which became turbid in forty-eight hours. The blood and the juice of the tumors, when examined under the microscope, exhibited similar non-motile bacilli, short, thick, round at the extremities, a little longer than broad—sometimes, however, drawn out into a longer rod, in which case the diameter was always diminished, being about half as great as the length—sometimes isolated, sometimes two or four were placed end to end. They were easily stained with alkaline solutions of methy lene blue, or with weak alcoholic solutions of gentian violet and of methyl violet and fuchsin, but they were scarcely tinged by Gram's method; the central part remained uncolored, whatever stain was used. Similar organisms were also found in sections of the tumor. They developed rapidly in beef broth at a temperature of 35° C. First a delicate flocculent precipitate appeared,

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which gradually increased in density; the organism in such cultivations forms chains; it grows more slowly in broth at the temperature of the room; but on gelatine it grows rapidly without liquefying it on the surface; it has a peculiar pearly luster, is translucent and irridescent; the margins of the thin plate growth are irregular or sinuous. As the growth gradually increases in thickness it becomes more opalescent. On potatoes it also grows at a temperature of 35° C., appearing as a moist, glistening, mucous-looking layer, at first pale yellow and gradually becoming yellowish-brown. It grows both in contact with air and *in vacuo*. A cultivation injected under the skin of a white mouse kills it in twenty-four hours, the bacillus being found in the blood of all the organs. Injected into rabbits, similar results are obtained in twenty-four to thirty-six hours; in neither case is there any appreciable change in the organs themselves. The authors, after giving an account of the histology of the disease, acknowledge that their results must be looked upon as tentative and incomplete until further corroboration is obtained.

CHANGES IN BONES IN THE COURSE OF CHRONIC LUNG AND HEART DISEASE.

Dr. E. Bamberger, Clinical Assissant to Professor Northnagel, in Vienna, publishes in the last volume of the *Zeitschrift für klinische Medicin*, Bd. 18, Hft. 3 and 4, some interesting cases of chronic changes brought about in certain of the bones of the distal ends of the extremities, in association with clubbed fingers and the chronic diseases of heart and lung in which they are liable to be met with. Seven cases of bronchiectasis are recorded, in which, in addition to the well known clubbing of the fingers, there was well-marked thickening of the long bones, especially the lower ends of the radius and ulna, and the tibia and fibula. Four cases of chronic heart disease are detailed, in which similar observations were made, and to some of these cases the records of full *post-mortem* examinations are appended. The clinical and pathological details are too elaborate for close analysis, but the main points of interest are the limitation of the change to the distal ends of the bones of the hands and feet, the upper arm and femur being attacked only in one or two cases; the skull, spine, and the bones of the shoulder and pelvic girdle

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were not attacked at all. The changes were the same in character, both in the lung and in the heart cases. The only symptoms noticed by the patients were aching or shooting pain on exertion or on violent coughing at or about the seat of the thickening. Tenderness on pressure was more frequently met with than the spontaneous pain, and persisted much longer. Both forms of pain were most marked in the lung cases, and some of the latter patients believed that the onset of the disease corresponded with the beginning of fœtor of the sputa. The ages of the patients were various, from a child with chronic heart disease to old men with long-standing bronchiectasis. The important distinctive sign with regard to the enlargement of the bones was the absence of any swelling beyond a very slight œdema in some cases of the soft parts around. Dr. Bamberger states that he has sought very carefully for more cases than those which he records, but has not succeeded in finding them. The change in the bones consisted of an ossifying periostitis, which in most cases had spread much beyond the limits recognized during life, with no alteration of the soft parts around except a slight degree of venous congestion. The periosteum could easily be separated from the bone, which was found to be covered with a vascular osteogenic membrane, yielding easily to the knife, and with its surface in part lamellar and in part rough and wartlike. In one case the spongy tissue of the bone itself was thickened and indurated. This was regarded as a later stage of the disease, which in many cases was never reached. In discussing the causation of these chronic changes, Dr. E. Bamberger suggests the possibility that they may be due to the reabsorption of altered secretions from the lungs, and recalls the fact that phosphorus and arsenic have been shown to set up similar changes in the long bones of fowls. Some experiments of his own upon rabbits, however, failed to set up any such changes. The views of other pathologists are duly quoted and discussed, but the conclusion is arrived at that no explanation has as yet been furnished which can be regarded as satisfactory from all points of view.

HÆMATOSALPINX IN PREGNANCY.

Dr. Lodewijks (*Nederl, Tijdschr. v. Verlosk. en Gynäk.*, 1890, ii) examined a woman, aged twenty-five, on account of severe pains

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in the hypogastrium. She was two months pregnant. The uterus was found retroflexed; it was replaced, but the pains continued. A few weeks later a distinct tumor was detected close to the soft, enlarged uterus. Extrauterine pregnancy was suspected, and laparotomy performed. The uterus was found to be normally pregnant: on its right was a hæmatsalpinx with a small ovarian cystoma. The coagulum within the dilated tube adhered firmly to its walls, and traces of tissue were found in the clot and believed to represent relics of a chorion. The intrauterine pregnancy ended normally at term, six months after the operation.

INFANTILE PLEURISIES AND THEIR TREATMENT.

Dr. A. F. Plicque (*Progrès Médical*, January 31st, 1891) summarizes his observations on the subject of infantile pleurisies and their treatment in the wards of Dr. J. Simon in the Hôpital des Enfants Malades, Paris. Pleurisy in infants is almost always secondary to some inflammatory or zymotic disease. Effusions have a marked tendency to become purulent, and in the case of children under four years pus is the rule rather than the exception. The collections of fluid are very prone to become encysted, and hence may be met with at any part of the chest, and not always at the most dependent portion. They are liable to burst internally, and the general prognosis is good, provided that the pus has free exit either through the chest wall or through the lung. Such forms of effusion are, therefore, very different from the similar conditions in the adult. Owing to the almost constant complication with some other morbid condition in the chest, the diagnosis is frequently difficult. Progressive dullness, with absence of respiratory sounds over the same area, are the only trustworthy signs. The gradual progress of the altered physical signs must be closely watched for a time before a certain diagnosis can be made. In the early treatment of infantile pleurisy the use of calomel and digitalis is recommended and a protest recorded against the abolition of the poultice, which is believed to aid absorption and to prevent the progress of the disease to the purulent stage. Tapping should always be done at first with the aspirator, an antiseptic solution being used to wash out the cavity. Fluid should always be withdrawn slowly

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and gently, and the introduction of the antiseptic solution—lukewarm boracic lotion is the best for the purpose—performed with equal care and deliberation. No fear need be felt in using large quantities of fluid to flush out the pleura; as much as five or six litres have been employed. If tapping fails to prevent the reformation of purulent fluid, an incision must be made and irrigation carried out in the same way. The best point for incision in case of a general effusion is somewhat farther forward than in the case of an adult, the anterior axillary line being selected instead of the posterior line. In case of encysted fluid the incision must be directly over the point of localization. Frequent and cautious washing out of the cavity is advised in after-treatment Estländer's operation is rarely necessary in the case of infants.

ABSORPTION OF FOOD STUFFS AFTER EXTIRPATION OF THE PANCREAS.

Some important observations have recently been made in Minkowski's laboratory in Dorpat on the above subjects, and some of them are published in an inaugural dissertation by one of Minkowski's pupils, M. Abelmann (Ueber die Ausnützung d. Nahrstoffe nach Pancreasextirpation, etc., Inaug. Diss., Dorpat, 1890). The experiments were made on animals—dogs—from which the pancreas was totally removed, either in one or in two operations, or in which the greatest part of the organ was excised. The most important results are the following: (1) In dogs without a pancreas, forty-four per cent. of the products of the digestion of proteids is still absorbed, while in dogs with a small part of their pancreas, about fifty-four per cent. is absorbed. If, however, pig's pancreas be mixed with the proteid food (horseflesh), a still larger amount of proteid is absorbed. (2) Carbohydrates are for the most part absorbed in dogs without a pancreas; still twenty to forty per cent. of the amylaceous food (bread) is not absorbed. (3) After total extirpation of the pancreas, all the fat of the food appears in the fæces. This seems to be due directly to the want of the pancreas and the absence of the pancreatic juice in the intestine; for on giving pig's pancreas along with the fats, the latter were absorbed. In this case the fats were given as neutral fats, but the

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same is true of fats emulsionized artificially before they were administered to the dogs. In the case of natural fatty emulsions, however, for example, milk, the case is different, about fifty-three per cent. of the fats being absorbed. (4) In spite of the absence of the pancreas, the fats are decomposed, an observation which confirms the well-known observations of Ogata and Cash, who showed that neutral fats were in small amount split up in the stomach. (5) When a part of the pancreas is left, a part of the fat is absorbed, and relatively more fat is absorbed when small quantities of fat are given than when a large quantity is given. Of milk, eighty per cent. of the fat is absorbed. In a second communication by Minkowski himself (Zur Lehre der Fettresorption, *Berlin. klin. Wochensch.*, No. 15, 1890), it is pointed out that the absorption of fats depends on the form in which they are administered. A natural fatty emulsion like milk, and the emulsion normally produced by pancreatic juice, have certain characters in common, and differ from simple soap emulsions produced by alkaline carbonates. Simple alkaline soap emulsions are at once destroyed by the addition of an acid, while the fatty emulsion of milk as well as that of the pancreatic juice resist the action of acids. The importance of the pancreatic juice for the absorption of fats may depend on its power of forming an emulsion of this sort.—*British Medical Journal.*

HÆMATOZOA OF MALARIA.

Dr. LAVERAN (*Journal des Connaissances Médicales*, January 8th, 1891) gives a very clear account of his methods of examination of the blood in cases of malaria. He points out that such examination is exceedingly necessary in hot countries, where typhoid fever or sunstroke may be mistaken for malaria, or *vice versâ*. An examination of the blood always puts the matter beyond doubt. He recommends that the examination should be made just at the beginning of a febrile attack, and before quinine has been administered, as during the period of apyrexia the organisms are seldom found in the peripheral circulation, but appear to be collected in the internal organs, and especially in the spleen. For the examination of the fresh blood, the skin should be cleansed with soap and water, rinsed with alcohol and carefully dried, then, everything being ready, the finger is pricked with a pin that has been

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heated to redness, and allowed to cool, the little round globule of blood that appears is touched with a clean slide; a cover glass is lowered down on to the blood, which is pressed out until the film assumes a transparent yellow color; the film is then not too thick, and should be examined at once. The clot that is formed at the margin prevents the drying of the film; but, in order to keep the film thin, it is better to wipe away the blood that is pressed from under the cover glass, and then to surround with paraffin. Daylight and no sub-stage condensor should be used for examination, or the organisms are rendered too transparent. The movements of the flagella and the amœboid movements can all be made out. If the organisms are pigmented they are readily enough seen, but a most careful search may have to be made for those non-pigmented organisms that sometimes adhere to the red blood corpuscles. If the specimen is to be preserved for further examination the film should be prepared by compressing between two cover glasses, which are carefuly separated, allowed to dry, and passed two or three times through a clear flame; each film is mounted unstained and dry, with a paraffin rim to keep out the air, and to retain the cover glasses in position. When it is wished to stain the organisms in order to bring them into special prominence, the films, after being heated on the cover glass, are put into a mixture of alcohol and ether; they are then allowed to dry, after which they are stained with a concentrated aqueous solution of methylene blue for thirty seconds; they are then rinsed in water and mounted dry, the cover glass being surrounded with paraffin. The leucocytes are colored deep blue, the free spherical organisms and those adhering to the red blood corpuscles pale blue, whilst other forms are scarcely tinged. A contrast stain may be obtained by using eosin. With these stained preparations artificial light may of course be used. In all cases where possible both methods of preparation should be resorted to, as each has its advantages.

"THOKA-LOSI."

Dr. Bolton G. Corney, chief medical officer of Fiji, has described in the *Transactions* of the Australasian Association for the Advancement of Science for 1890, a similar mutilation practiced by Fijians, especially in the central and western provinces,

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where the admixture with the Tongan race is least. A bougie made from the twig of the tree called by the natives *losilosi* is passed down the urethra as far as the membraneous portion, and an incision about an inch in length is made down upon it with a rude knife formed from a sharp shell, a slip of bamboo, or, where such a civilized implement can be obtained, with a piece of broken glass bottle. The operation is called thokalosi—losi-piercing. It does not appear to be performed as a religious rite, and Dr. Corney does not believe that it is intended to render the man sterile, which has been asserted to be the object of the Australian mutilation. On the contrary, it would seem to be used merely as a method of treating such painful affections as rheumatism, catarrhal fever, pneumonia, and pleurisy, under the idea that, by incising a dependent portion of the trunk, relief will be given to the accumulation of blood which is supposed to have occurred. This view appears to be confirmed by the existence of another form of mutilation termed *targa-ngalengale;* it consists in incising the urethra from the meatus to a point just behind the frænum preputii, severing the artery; after this, as much as half-a-pint of blood may be lost, so that the operation is evidently a primitive kind of venesection. Dr. Corney states that after the graver mutilation produced by thoka-losi the wound soon heals, and perineal fissure seldom or never results.—*Brit. Med. Journal*, February 14, 1891.

PROGRESSIVE DEAFNESS IN CHRONIC NON-SUPPURATIVE MEDIAN OTITIS.

Gradenigo (*Annales des Mal. de l'Oreille*, December, 1890) holds that since pathology has shown that the great majority of cases coming under this description are the result of extension into the tympanic cavity through the Eustachian tube of morbid processes which have their seat in the naso-pharynx, the subtle distinctions between the different clinical forms assumed by the affection have lost much of their importance from the therapeutic point of view. He distinguishes forms in which the phenomena attributable to changes in the tympanum and Eustachian tube predominate (good "bone-conduction," retracted membrane, improvement on inflation, etc.): others in which the lesions are more localized in the region of the stapedio-vestibular joint;

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others, again, in which lesions of the internal ear predominate. The first group present changes which are to a great extent remediable, but, if neglected, pass into more advanced stages, constituting the second and third groups. He employs treatment chiefly directed towards the naso-pharynx (galvano-cautery, nitrate of silver, iodine, etc.), associating with it "massage" of the membrana tympani by means of Delstanche's "masseur," and, if they are indicated, the air-douche, catheterism, introduction of Eustachian bougies, etc. Patients subjected for a long time unsuccessfully to direct treatment of the ears and intra-tympanic injections derived great advantage from naso-pharyngeal medication.

HAWKING.

A cure for hawking due to accumulation of inspissated mucus in the naso-pharynx is, according to the *Omaha Clinic*, the following:

℞. Ammon. muriatis,
Pulv. ext. glycyrrh.....aa ʒ ij.
M. F. pulvis.

Of this, two teaspoonfuls are taken in a glassful of water on an empty stomach in the morning, every two hours during the day, and the last dose before retiring. This is continued until one single attempt at clearing the throat will cause an easy and loose expectoration, when the frequency of the dose is reduced first to every three, then to every four, and finally five hours.—*N. Y. Med. Rec.*, March 28th, 1891.

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Editorial.

DR. HOSMER ALLEN JOHNSON.

It is with pleasure that the excellent portrait of the late Dr. Johnson is presented in this number. An obituary notice written by his life-long friend and colleague Dr. Edmund Andrews, appeared in the March issue shortly after his death, and further comment on one of the best and noblest representatives of the profession is not needed by whoever came, even distantly, within the circle of his elevating influence. The record he has left as a man, a student, and teacher, as a friend and physician, is the best monument to his memory, and will be an active incentive to all, to emulate his greatness and goodness.

SOCIABILITY IN THE PROFESSION.

The exacting nature of a medical man's duties and vocation, and the unseasonable demands upon his time, in a very large measure deprive him of those opportunities for social intercourse and intimate amenities open to every other walk in life, for which he not only often yearns, but is eminently qualified to enjoy. The same is true of his relations to his brother-practitioners, even in his immediate neighborhood. While this in a measure is unavoidable, much could be done to establish more friendly and pleasant, or even intimate relations of confraternity if individual and united effort were put forth, with a result that would be conducive to the enhanced dignity and *esprit de corps* of the body medical. In the chance encounters of a consultation, on the curb-stone, at a society meeting or in dispensary and hospital work, acquaintances are made, but abiding friendship is seldom brought forth; yet our interests are common, our aims the same,

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and our work is in parallel lines. Too often the medical man is so wrapped up in his work, his cases, and responsibilities, that he can think and talk of nothing else. It results that he pours out all his troubles, annoyances and successes to any and every *confrere* he meets. There are times for all things, but to talk shop all the time and to think shop in the intervals, is narrowing and unnecessary. It is out of the question for a medical man to be a society man or a club man, if he is doing much business, nor is it desirable that he should be, but undoubtedly the entire renunciation of social obligations so commonly adopted, is as unnecessary as it is unfortunate for all concerned.

Indications are to be found that in the profession itself a little is being done to increase the intimacy of its associating members. Aside from purely medical societies there are a few medical clubs where the bread of fellowship is broken, and a large Eastern society has arranged for sandwiches and coffee after its meetings, —an innovation which seems to cause the greatest satisfaction. Acting upon the suggestion of the retiring president, the Chicago Medical Society has determined to give up several evenings during the year to purely social and friendly intercourse and gastronomic activity, where new members may meet older ones, and each other, and all may find out what really good fellows doctors are, after all.

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Society Proceedings.

THE CHICAGO MEDICAL SOCIETY.

Annual Meeting April 6th, 1891.

The President, Dr. Frank Billings, in the chair. After approval of the minutes of the preceding meeting, the Secretary's annual report was presented, accepted and placed on file.

The report of the Committee on Publication was made by Dr. E. J. Doering, and had reference mainly to the new form in which the proceedings are published, viz: in The Chicago Medical Recorder.

The President then made a brief address, dwelling upon the needs and interests of the Society, upon its work, membership and importance, and urging more sociability among its members.

As a result of the annual election, Dr. Daniel R. Brower was chosen President, Dr. Frank E. Waxham First Vice-President, Dr. Robert D. MacArthur Second Vice-President. Dr. Junius C. Hoag was reëlected Secretary, and Dr. H. N. Moyer Treasurer. Dr. L. A. Barlow was elected Necrologist. To serve three years on the standing committees, the retiring President, Dr. Frank Billings, was elected on the Judiciary Committee, Dr. J. H. Stowell, Membership Committee, Dr. William T. Thackeray, Committee on Publication.

The Treasurer's report showed some eleven hundred dollars in hand.

Appropriations from the Treasury were ordered as follows: Honorarium for the Secretary, two hundred dollars; for the Treasurer, one hundred dollars; for the Grand Pacific Hotel, fifty dollars.

On motion it was decided to pass over the appointment of the members of the Library Committee, as there seemed to be no further duties for such committee. Upon the suggestion of Dr. Holmes that the committee had still some funds to dispose of,

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it was decided to retain this committee, and Dr. T. MELVILLE HARDIE was elected committeeman for three years.

On motion it was decided to instruct the delegates to the American Medical Association to vote against the transfer of the Journal of the Association from Chicago.

Dr. J. O. ROBINSON gave notice that he would move to appropriate from the treasury the sum of one hundred dollars, to be divided in two equal prizes of fifty dollars each, for the two best original papers of the year.

The report of the Auditing Committee was then received, accepted and ordered filed.

The Executive Committee was authorized to issue Delegates' certificates as usual.

On motion the Executive Committee was authorized to arrange for social meetings.

The applications of Drs. C. A. Weil, Charles Jacob Dietz and James G. McCurdy were received and referred to the Committee on Membership.

Escorted by Drs. DOERING and ZEISLER, the President-elect, Dr. BROWER, was formally conducted into office, and made a brief but very effective address.

On motion the Society adjourned.

JUNIUS C. HOAG, *Secretary.*

Regular Meeting April 20th, 1891.

A meeting of the Society was held at the Grand Pacific Hotel, Club Room 4.

The meeting was called to order by President DANIEL R. BROWER.

On motion of Dr. DUDLEY the President was authorized to appoint a Secretary *pro tem.* to fill the place of Dr. Hoag during his illness. Dr. JOHN EDWIN RHODES was so appointed.

The minutes of the last meeting were read and approved.

The applications of Drs. Wm. A. Mann, Walter N. Lowrie and O. Prescott Bennett were read and referred to the Committee on Membership.

Dr. E. C. DUDLEY reported a case of extra-uterine pregnancy, and exhibited the specimen. See page 240.

Dr. HENRY T. BYFORD said: I was very much interested in

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this case, and happened to be present at the operation. I believe in most cases of extra-uterine pregnancy that go on to term that the development is subperitoneal or entirely without the peritoneal cavity. In nearly all cases that rupture into the peritoneal cavity there is death of the fœtus before term. This fact gives us one pointer as to their treatment. Another fact is that nearly all the cases that die, whether by the vaginal or abdominal operation, die of hemorrhage. It has been recommended by Tait that we open just as Dr. Dudley did in this case, and avoid if possible entering the abdominal cavity. I have been led from my slight experience and some little study of these cases to think this proceeding not always best. We should, I think, open in the median line, attempt to get into the abdominal cavity, hunt out the vessels and ligate them, at least those in the upper part of the broad ligament on the affected side. After we have ligated these vessels we can, in many instances, take off the placenta. Leaving the placenta is often exceedingly dangerous, because it is difficult to avoid loosening its edges during the operation, and if we thus detach its edges the patient must usually bleed to death, because there can be no contraction. Sometimes there is contraction at the site of the adventitious uterus after the entire placenta is removed. Another thing in this connection is that these cases should be operated upon at the earliest moment they are seen, without allowing the child to become viable or go to full term in order to allow it to die, and the placenta to become somewhat dried up. The earlier the stage of development, the easier is the ligation. I had a case seven days ago in which one or two of these facts were quite well illustrated. I opened and found a mass in the left broad ligament about the size of a cocanut. It was a three-months' fœtus which had been dead but a short time. There was quite a large placenta, which seemed to have grown somewhat after the death of the fœtus. I clamped the broad ligament, cut into the sac, and came immediately upon the placenta. With some little hemorrhage from the edges, I stripped it off and pulled it out with the fœtus and clots, and then had almost no bleeding. The most interesting part of the operation, however, was when I took off the clamp and tied the broad ligament; the cavity which had contained the clots and the fœtus contracted to nearly one-half its former size.

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As to enucleation, I think this should never be attempted, for this reason: The tumor developing in the broad ligament lifts the peritoneum behind, comes up under the sigmoid flexure on the left side, or the cæcum on the right, and becomes adherent to them, and if we enucleate we are sure to have considerable hemorrhage and trouble with the intestines. In cases in which the fœtus has developed in the broad ligament, there have not been enough operations to determine the exact method of ligating and tying of the vessels. I wish to restrict my remarks to cases in which the placenta has not gone all over the abdomen in search of a place to make an attachment, but to those in which it remains within its broad ligament sac.

Dr. DUDLEY. Your case was one of three-months' pregnancy in which you tied off the broad ligaments and secured the vessels, but do you lay that down as a rule in operating in cases after full term? It is a very different thing.

Dr. BYFORD. I would attempt to ligate the vessels in all cases.

Dr. DUDLEY. There is a different condition at full term than at three months. You can manage three-months' cases without tying the broad ligaments.

Dr. BYFORD. I understand that; still, these cases die mostly of hemorrhage. It is not opening the peritoneal cavity that kills our patients, it is hemorrhage. I should open and at least get the benefit of ligating. In operating upon ovarian tumors that have been developed in the broad ligaments I have found very few cases in which the uterus was so intimately connected that we could not ligate the vessels at the upper part of the broad ligament.

Dr. CHRISTIAN FENGER. Mr. President: When I saw on the announcement card that Dr. Dudley was going to report a case of extra-uterine pregnancy, I thought it would be expedient for me to exhibit these specimens, because the more similar cases that are reported at the same time, the more we will learn about them. These specimens, consisting mainly of intestines, have changed considerably, but fortunately I have a correct sketch, made at the time of the autopsy.

The specimens are from a case of extra-uterine pregnancy, with dead child, in which the operation was deferred until twelve

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weeks after term, to await the cessation of placental circulation. Perforation into the bowel necessitated speedy operation. This was followed, on the fourth day, by uncontrollable intestinal hemorrhage, which, notwithstanding intravenous infusion of saline solution, proved fatal four days later.

As will be seen in the sketch passed around, the autopsy revealed an opening at the upper insertion of the placenta, between the sac and the transverse colon. This opening was so covered by the border of the placenta as to make the blood pass down into the bowel, and not out into the sac. The sac, as this specimen shows, is of very different thickness in its different portions. On the anterior surface it is about one-quarter of an inch thick, corresponding to the surface where the fœtus was covered with omentum, and consists, in fact, of the thickened omentum. The remainder of the fœtal cavity is entirely surrounded by loops of intestines, small intestine and colon, and here the sac-wall is extremely thin, in some places cobweb-like, in other places slightly thicker, and everywhere more or less intimately adherent to the wall of the intestine. These adhesions are the result of a plastic peritonitis commencing at the time of the primary rupture into the peritoneal cavity, and extending as the fœtus increased in size.

The placenta extends from the posterior surface of the uterus, entirely filling Douglas' fossa, more than six inches upward to the transverse colon. The placental area of the sac is, as will be seen, very thin in some places; so much so that it tore into shreds on even so slight a manipulation as that required for the removal of the intestines *en masse* during the autopsy. The condition of the sac in this case makes it evident that it would have been entirely impossible to extirpate it during the operation, as such an attempt would have resulted, as has been seen in other cases, in such injuries to the intestinal wall that multiple ruptures would have been the result, and it would have been absolutely impossible to complete the operation.

In considering the termination of this case, I regret that I followed Litzmann's advice to wait for the cessation of placental circulation, instead of operating early, and I agree with Dr. Byford, that we should not take the fate of the child into consid-

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eration, but that we should operate as early as a diagnosis can be made, and while the mother is still in good condition.

The operation with living child is called the primary operation; with dead child, the secondary operation. It is still an open question which of the two should be preferred. The mortality of the primary operation is the greater by ten to fifteen per cent. as compared with that of the secondary operation. However, in spite of the apparently greater safety in the late operation, we find that the representative men of the profession, everywhere, in England and Germany as well as in this country, lean more and more toward the early operation.

I am inclined to give up late operating, and propose to operate at the earliest possible stage, waiting neither for the development of the fœtus to full term, nor for placental circulation to cease. The explanation of this is the fact that cases are repeatedly met with, in which, as Olshausen says, the surgeon had waited and finally set a day for operating, and during this period of waiting the perforation into the intestine, and sepsis or hemorrhage occurred. Any of these conditions have often terminated fatally, even before a speedy operation could be performed, and the operation under such circumstances has very often proved inefficient to save the patient's life.

The cases of speedy death after rupture were not included in the statistics of the operation, but those cases ought to be included in the mortality of the secondary operation, in which, during the period of delay until the cessation of placental circulation, the patient lost her life from the rupture.

It would be more reasonable to say that the late operation has a good prognosis only in cases where the patient is able to wait, because the anatomical conditions are such that perforation does not take place.

In a given case it is probably impossible to be certain whether the patient will be able to wait or not; hence there is the more safety in the early operation.

I agree with Dr. Dudley that there is a wide difference between early and late extra-uterine pregnancy; they have very little in common, and any rules laid down for operation in early extra-uterine pregnancy are of absolutely no value in the late pregnancy.

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Dr. Moore, of Minneapolis, by invitation, said: I don't know that I can add anything of importance to this discussion, but I am glad to have heard Dr. Fenger take the ground he did, and from my own personal observation and that of my most intimate friends, some of whom have had large experience in this particular line of cases, I fully agree with him that these cases should be operated upon at an early date, because so many times we lose our cases before we are ready to operate if we set the date too far ahead. One interesting point that has not come up to-night came before our society lately, and the reader of the paper took the ground that a case should not be operated upon when severe hemorrhage is going on. I cannot help believing, upon what seems to me good surgical practice, that the patient should certainly be operated upon in a case of this kind when the hemorrhage is going on, trying if possible to reach the seat of hemorrhage and stop it, just as in any other case. In other words, I cannot see why we should allow a patient to bleed to death in this case any more than in another.

Dr. E. C. Dudley, in closing the discussion, was very glad to hear Dr. Fenger's remarks relative to the way in which the mortality of the secondary operation, so-called, should be estimated—that is, it should include not only all fatal cases from the operation itself, but also those who die while waiting for the operation.

Dr. Byford's idea of securing the uterine and ovarian arteries by ligature of the broad ligaments, in order to guard against hemorrhage from the placenta, is theoretically correct, and is practical for the three months' pregnancy of which the Doctor speaks. Experience, however, has shown that the broad ligaments cannot, as a rule, be found, and therefore cannot be ligatured in extra-uterine pregnancy at term. As Dr. Byford says, the ligaments can often be found and ligatured in large ovarian cysts, but I cannot agree with him that I could, therefore, easily find and secure the ligaments in extra-uterine pregnancy at term. No practical conclusion on this great question can be deduced from observations on early extra-uterine pregnancy, or large ovarian tumors.

Dr. G. Frank Lydston exhibited a number of criminal skulls illustrative of his remarks on "Degenerate Cranial Development" (see page 203), and Dr. E. S. Talbot presented a number of

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original drawings illustrating defective and degenerate dentures in the dependent classes, which he divided into the V-shaped arch, the saddle-shaped arch, and their varieties. Degenerate forms are also due to excessive or defective development. He found the percentage of normal jaws to be: In health, 78 per cent.; in the insane, 90 per cent.; Hebrew orphans, 74 per cent.; Harvard College students, 60 per cent.; idiots, 55 per cent.; blind, 50 per cent.; deaf and dumb; 45 per cent.; criminals, 34 per cent.

In the discussion following

Dr. J. J. M. ANGEAR said: I rise to ask a question or two; I have been greatly interested in the presentation of this subject, and have been listening for something to be said in reference to the vertical palatal arch. Nearly all of these skulls that have been presented to-night appear to be normal in that regard. I would ask if any observations have been made in that direction? Another point which struck me in looking at these skulls is that the foramen magnum in nearly all of them is in the line of the center of gravity, as laid down as a characteristic of the human skull. Then again, with reference to the development of the skull; our attention has been called by writers to the fact that syphilis has a tendency to hasten ossification of the base of the skull, which gives it a contracted position or shape with reference to the relation the base bears to the arch or upper part.

Dr. H. N. MOYER. I do not think I can add much to what has been said. We have here a collection of skulls presenting many striking abnormalities, such as we find among the defective classes. I have had an opportunity of examining a large number of criminals, and it is notorious that they present an unusual asymmetery of the skull. Of course the vital question is as to what relation these abnormalities have to defects of the brain and mentality; and a practical point presents itself as to their bearing on criminal responsibility. It has been for years an important question, and particularly since the work of Maudsley, as to whether criminals were wicked in the theological sense, or whether they were simple defective and unfortunate; in other words, that the criminal is but a moral lunatic. It will not do for us to assume that because a person has a deflected septum, a crooked jaw, or a head rather longer than it should be, that he is neces-

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sarily a criminal, or likely to become one. But if it shall appear that these deformities are present in vastly larger numbers and extent in criminals than in others, it is a fair inference at least that their moral defect may partake of the same structural peculiarity, and one for which they are not responsible.

Dr. G. C. Paoli. Comparison between the skulls of the ancients and the heads of the present generation leave no doubts as to the fact that the cranium of the European has, in the course of historical time, gained in circumference. The important and interesting researches of Abbè Freree in Paris, who has collected several thousands of crania of all centuries of our era exhibiting the various phases of development, has led to the conclusion that the older and more primitive the human subject, the more developed is the skull in the occipital region and the flatter is the forehead. The progress of civilization seems to have produced the effect that the anterior portion of the skull became more arched and the occipital part less developed.

Dr. Frank S. Billings. The interesting question is, does the osseous tissue influence the parenchymatous development, or not? In other words, upon which principle do we go in breeding? Unfortunately we do not know much about breeding men and women; but I have had some experience in breeding animals. If you follow up the development, for instance, of Short-horn cattle, from the ordinary wild cattle, you will find the first change in the development of the osseous tissue. We have got to get room for muscle. We want flesh, broader transverse processes and deeper spinous processes. The same thing holds true in intellectual faculties; you have got to get room, and the room is not always displayed by the outside characteristics.

What I was going to say is that the medical profession should be the leader in all anthropological and moral studies. These skulls are interesting in that respect, and why should we not take a lesson from them? There is no breeder of thoroughbred horses who would breed from an animal with such a looking skull as one of these. I believe in protection, and the only way to do with the criminal is to "off with his head," or unsex him, which is much the same thing. We ought to study this development, the relation that the bones of the skull bear to the

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characteristics, more than we do; this is the work of the medical profession, and I am glad it has been brought up and discussed.

Dr. J. FRANK. I want to ask Dr. Lydston if, in fresh specimens of microcephalic and criminal skulls, he could tell the difference? Some time ago I read an article on septums of the nose, in which the author claimed that a deflected septum shows culture, and generally appears in highly-cultured people. The main point I wish to speak of is whether there may not be some surgical procedure that will effect a cure in these criminal cases; that is, whether the trouble is due to the non-development of the brain, or of the skull itself. It is too bad that we do not know the history of these cases in childhood. An operation has been done in the case of idiots, and I do not see why it cannot be done as well in criminals. Lannelongue, of Paris, has operated on three or four cases of microcephalic idiots by trephining, or sawing out a line in the length of the sagital suture, about half an inch away, allowing the brain to develop, and he has had two or three fine results. These specimens that Dr. Lydston has exhibited suggest that something might be done, if we could know the early history of these cases.

Dr. FRANK G. LYDSTON. I was much interested in Dr. Talbot's statistics regarding the development of the jaws of the insane. He stated that he had seen a very large proportion of well-developed, symmetrical jaws in the insane as compared with the criminal classes. I would state that the observations of Ferri and others show that the insane, as seen in European institutions, are affected in great proportion by a degenerate type of jaw, but in the direction of defective development. They state that the criminal classes, at least the higher types, present the heavy over-development that I described a few moments ago. So that their observations were entirely different from those of Dr. Talbot. I have explained this by the difference in the environment of the individuals who have been studied; of course the factors of evolution have had a longer time to exert their influence on the criminal types of Europe than in this country.

Dr. Angear said something about the normal development of the palatal arch in these cases. I think he is a little in error in regard to these skulls, for there is hardly one among them that has a perfectly normal arch. As regards the foramen magnum

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being situated in the center of gravity of the skull, the appearance of this foramen would hardly coincide with that opinion.

I am not satisfied that syphilis is the rational explanation for the deformities of the base of the skull; certainly syphilis, in order to be operative in producing mal-development of the skull, must almost necessarily be congenital, and most cases of congenital syphilis die very young. Those cases in which aberrations of development have been noticed, and have been attributed to syphilis, are rare and have been disputed.

I will state that in the Atlas of Lombroso, in which are a large number of illustrations of criminal skulls, there are no such extreme types as I present in this small series. It is obvious that, after all, the capacity of the skull is more important than its external development. Oftentimes there will be an excess of development of the exterior of the cranium, which is due to osteo-sclerosis, or syphilis, and in such cases the external development is no criterion of the capacity. Again, the internal circumference is very often disproportionately small. The relationship of the development of the cranium to its contents is most important in the consideration of these cases. If it is possible in some of these cases of aberration of cranial development for the interior of the skull to be of normal formation, it is possible for the brain to be normal. It has been shown that the criminal type of brain, if there is such a thing—the degenerate type—is found in the insane, particularly in the criminal insane. Simplicity of type is usually a degenerate type; simplicity of the arrangement of the gyres, relatively short gyres, and simplicity of type of brain in general, is said to be the peculiar aberration of development seen in the brain of the criminal.

Dr. Billings brought up the subject of remedies. I agree with him that the proper thing to do is to begin before the criminal is born. The first thing to do in justice to the criminal is to give him healthy parents, or deprive his possible parents of their capacity for procreation. There is no question, however, that, in numerous cases, it is the environment and training that is responsible for crime; but if we associate with faulty environment and training faulty development of the brain, those factors must be all-important in determining criminality in after-life.

Dr. Frank asks whether, in such specimens as the first, I

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could tell the microcephalic from the criminal skull. I hardly see how that could be practicable; the microcephalic type may be seen in criminals; indeed, it is often seen. But it was not my intention to convey the idea that the form of the skull betrays the mental attributes of the individual; other things being equal, however, we would expect a criminal tendency in the microcephalic to a greater extent than in the normal individual. What I claim and believe to be shown by the researches thus far made in criminal anthropology is that criminal skulls, as a class, are a degenerate type, and that is all. The external formation counts for little, except as a mark of degeneracy, and associated with it there must be, in the majority of instances of degeneracy of type, degeneracy of cerebral development.

The embryological points brought out by Dr. Moyer and Dr. Billings are most important, but require more time and thought for their discussion than I am able to give them. I am very grateful for the interest taken by the Society in a subject apparently so impractical yet so thoroughly fascinating as that which Dr. Talbot and myself have introduced this evening.

Dr. E. S. Talbot. There are three points of interest upon which I would like to say a few words. One is in regard to the microcephalic skull. There were three Chinese criminals at Joliet. Every one had a small skull, and in two of the three there was a saddle-shaped arch, showing a small superior maxillary bone. It is a fact that in the Chinese the jaws are are always normal, they are fully developed and there are no irregularities of the teeth, but in the three criminals in Joliet the third had a microcephalic head and two of them had saddle-shaped arches.

We may find any irregularity of maxillary bones and teeth arising from arrested development which may be inherited from drunken parents or the result of local causes arising from eruptive fevers and constitutional disease.

Dr. J. Frank read a paper entitled "Circular Excision of the Female Urethra; a New Operation." (See p. 236.)

Owing to the lateness of the hour, the papers of Dr. Babcock and Dr. Boerne Bettman were deferred till some subsequent meeting. On motion the Society adjourned.

John Edwin Rhodes, *Sec'y pro tem.*

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Reviews.

ELECTRICITY: ITS APPLICATION IN MEDICINE AND SURGERY. A BRIEF AND PRACTICAL EXPOSITION OF MODERN SCIENTIFIC ELECTRO-THERAPEUTICS. By WELLINGTON ADAMS, M.D. Vols. I. and II. Geo. S. Davis, Detroit. 12mo., cloth, 50 cents; paper, 25 cents per vol.

Recently we have had many new books on Electricity in Medicine, and it is to be said that much advancement in our knowledge of electricity and in electrical apparatus, has justified some of them, though electro-therapeutic advancement has not been equally rapid. This little work of Dr. Adams, from a practical point of view, is the most satisfactory that has yet come to hand, and this may be because therapy finds almost no place in it. One desiring a modern and scientific understanding of this important agent will do well to consult this manual, and even the controversial and dogmatic style will not be found entirely blamable, as it seems to enliven a rather dry subject. The various manufacturers receive fair treatment, and one feels that the various devices recommended by the author have been tested, and can be relied upon. The two volumes constitute numbers ten and eleven of Series IV. of The Physician's Leisure Library.

TAKING COLD. By FRANKE H. BOSWORTH, M.D., Professor of Diseases of the Throat in Bellevue Hospital Medical College of New York. The Physician's Leisure Library. George S. Davis, Detroit, 1890 12mo., pp. 69. Paper, 25 cents.

We feel sure that a book devoted to a subject so commonly met with in practice, concerning which so many vague and indefinite theories exist, and which is not considered in text-books, will be very acceptable to many readers. Dr. Bosworth's book contains nothing especially new, but presents our practical knowledge of the subject in an interesting and readable form. The chapter on "How we take cold" is especially good, while in

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dealing with the treatment of colds, instead of considering all possible means of treatment, as is frequently done, much to the annoyance of most readers, the writer only mentions the most valuable methods of treatment. On the whole, any one might read the book with profit during a leisure hour.

INTERNATIONAL CLINICS: A QUARTERLY OF CLINICAL LECTURES ON MEDICINE, SURGERY, GYNÆCOLOGY, PEDIATRICS, NEUROLOGY, DERMATOLOGY, LARYNGOLOGY, OPHTHALMOLOGY AND OTOLOGY. By Professors and Lecturers in the leading Medical Colleges of the United States, Great Britain, and Canada. Edited by JOHN M. KEATING, M.D., J. P. CROZER GRIFFITH, M.D., Philadelphia; J. MITCHELL BRUCE, M.D., DAVID W. FINLAY, M.D., London. Philadelphia: J. B. Lippincott Company. Chicago: W. T. Keener. 8vo., about 350 pp. Cloth, $2.75 per vol.; leather, $3.00.

The announcement of the above work, with sample pages, plates and illustrations gives promise of furnishing a most valuable addition to medical literature. For the past decade the tendency to clinical instruction has been so emphatic in all medical schools, and the establishment of Policlinics has been so pronounced a success that a mirror of clinical instruction such as is here promised will be welcomed by all.

Among the contributors to Vol. I. are the names of Alfred L. Loomis, S. Weir Mitchell, F. C. Shattuck, J. Mitchell Bruce, James Ross, J. Solis Cohen, H. C. Wood, W. W. Keen, William Goodell, Charles T. Parkes, Christopher Heath, William T. Gairdner, David W. Cheever, J. Nevins Hyde, J. W. Hulke, C. B. Nancrede, T. Parvin, B. Sachs, David Ferrier, Landon Carter Gray, Sir Dyce Duckworth, Henry T. Byford, and others. With such an array of talent, each man giving his best work to the volume, its great value is assured. The intention is that it should be practical, with stress upon Diagnosis, Differential Diagnosis, Prognosis, and particularly Treatment. With the half-tone plates and numerous cuts the reader will have practically the privilege of attending the lectures of the best instructors in the English-speaking countries.

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TEXT-BOOK OF BACTERIOLOGY. By CARL FRAENKEL, M.D., Professor of Hygiene, University of Königsberg. Third Edition. Translated and edited by J. H. LINSLEY, M.D., Professor of Pathology and Bacteriology, Medical Department of the University of Vermont, etc. New York: William Wood & Company. 1891. Chicago: W. T. Keener. 8vo., pp. 376. Cloth, $3.75.

As the translator states in his preface, there is no work on bacteriology in the English language that deserves the name of a text-book, and the present translation is to meet that want. Fraenkel has long had the reputation of a careful observer, and anything to which he subscribes is worthy of confidence. The first four chapters are devoted to classification, development, methods of investigation, of breeding and of transmission; Chapter five to Non-pathogenic Bacteria, six to Pathogenic Bacteria, seven to Investigation of Air, Soil and Water, and an appendix to Mould and Yeast Fungi. A most noticeable feature of the book is the absence of all illustrations. In microscopical and bacteriological work numerous cuts and colored plates are so customary, that one feels at a loss without them. Their value, however, may be overestimated, for one must learn to recognize objects as they appear in the field of the microscope, or in the test-tube, by actual observation, and this can not be substituted by any number of cuts, however well executed. The subject matter is handled very interestingly, and the English translation is remarkably smooth and free from Teutonic impress. The work is cordially recommended to students, practitioners of medicine, and to all interested in this important field of research, without a knowledge of which one's opinions in matters pathological are absolutely valueless.

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News Items.

Dr. J. C. Hoag was ill nearly all the month of April.

The American Medical Association met in Washington, D. C., May 5th to 8th.

Dr. J. S. Knox has removed from 14 Loomis street to 2227 Calumet avenue.

Dr. W. L. Noble has been appointed County Physician to succeed Dr. Ware, resigned.

The French Congress of Scientific Societies will be held at Paris from May 19th to 23d.

Dr. Bayard Holmes has removed his office to 240 Wabash avenue. Office hour, 3 to 4 P. M.

Dr. Ferdinand Henrotin sails for Europe on the Normania May 7th, to be gone three months.

The Bavarian government has forbidden the sale of Tuberculin by druggists, even to physicians.

Dr. Charles Gilman Smith is spending some time at the Arkansas Hot Springs in search of health.

The annual meeting of the Illinois Army and Navy Medical Association will be held in Springfield, May 18th.

Dr. E. E. Holroyd has removed his office and residence from 412 Park Avenue to 885 Washington Boulevard.

Professor Leon Labbe and Professor Peter, of Paris, have been promoted to be Commanders of the Legion of Honor.

Dr. C. B. Wood, a graduate of the Chicago College of Physicians and Surgeons, '84, now of Honolulu, is visiting in the city.

Dr. A. R. Reynolds, upon his return from the South, was taken seriously ill and confined to the house until the last week in April.

Dr. L. L. McArthur has moved his residence to 4247 Drexel Boulevard, from 3305 Forest Avenue. Hours until 8:30 A. M., and 6 to 7 P. M.

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The Medical Faculty of the University of Bonn has abandoned the use of both Koch's and Liebreich's remedies for tuberculosis.

Dr. DANIEL H. WILLIAMS, of Chicago, has been reappointed a member of the Illinois State Board of Health by Governor Fifer for the term of seven years.

The Imperial School of Medicine at Constantinople recently addressed a petition to the Turkish Government, asking it to prohibit the use of Koch's tuberculin in private practice.

Geo. M. PULLMAN has given St. Luke's Hospital a children's ward consisting of two rooms with accommodations for twenty-two, which is elaborate and complete in every particular.

Dr. JOHN EDWIN RHODES has removed his residence to 506 West Adams street. Telephone, 7,319. Office, 70 State street, southwest corner of Randolph. Hours, 10 A. M. to 2 P. M.

County Physician WARE has been appointed City Health Commissioner to succeed Swayne Wickersham, and Dr. A. C. COTTON has been named City Physician by Mayor Washburne.

The German Emperor has ordered that the street at the back of the Friedrichshain Hospital in Berlin shall in future bear the name of Professor VIRCHOW. This is another black eye for "Tuberculin."

The first Mohammedan lady who has joined the ranks of the medical profession is said to be KUTLO JAROFF-HANUM, a native of the Crimea, who has just taken her Doctor's degree in the University of Odessa.

Special courses of instruction in pharmacy for women were opened on March 8th in the City Barrack Hospital at St. Petersburg. Female pupils have already taken the place of the male students in that institution.

A very pleasant reception to Dr. A. REEVES and Mrs. JACKSON upon their return from a round-the-world-trip was tendered them by Dr. and Mrs. J. H. Stowell Thursday evening, April 23d, at their residence, 526 Wabash avenue.

A death from chloroform in Milwaukee is reported in the lay press, but details are unobtainable excepting that it must have

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taken place, if due to this agent, several hours after the cessation of its exhibition.

Dr. J. E. CHAMBERS has changed his residence to 3300 Cottage Grove avenue. Hours, 9 to 10 A. M., 7 to 8 P. M. and nights. Telephone, 8,310. Change of hours at 113 Adams street, 11 to 1 and 2 to 4. Sundays, 11 to 1. Telephone, 857.

Dr. GERMAIN-SEE, of Paris, has brought forward a treatment for tuberculosis which he highly extols. Patients are swathed in linen bandages saturated with creasote and subjected for about five hours daily to a pressure of an atmosphere and a half in a close cabinet.

The Government inspection of meat at the Chicago Stock Yards has commenced under Dr. V. T. ARKINS, Chief Inspector at the Morris Packing House. All beef for foreign or interstate trade will bear a stamp showing its quality. Hog inspection will be taken up later.

A committee of ladies, which includes the widow of the late Professor von Wahl, Baroness Stael von Holstein, Baroness Stackelberg, and several other local leaders of society, has been formed at Dorpat for the provision of the beds, ward furniture, etc., for the new leper house about to be opened in Livonia.

On March 4th the arrangements for the electrical illumination of the new clinics in the University of Moscow were completed. The rooms are lighted by more than one thousand lamps of from ten to sixteen candle-power, and in each of the operating theaters there are three lamps, each of one hundred candle-power.

Out of six applicants, Drs. WM. E. CRAMER and EDWARD B. HUTCHINSON were appointed internes at St. Luke's Free Hospital. The hospital staff at present is as follows: Dr. Edward F. Gavin, House Surgeon; Dr. Philo L. Holland, First House Physician; Dr. Wm. E. Cramer, Second House Physician.

The influenza as such has practically subsided in Chicago and has passed eastward to New York, London and the Continent. The high death-rate of March was even exceeded in April, but the great mortality from chest diseases has declined, and diseases of the nervous apparatus, especially meningitis, have been prevalent and fatal.

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A contract betweeen the city and county to build a new morgue is being considered, and the prospect for the speedy erection of this much needed public institution is promising. The County has voted twenty thousand dollars and the City is expected to appropriate ten thousand dollars for this purpose.

In the Chamber of Deputies on March 17th, M. DEROULEDE introduced a measure excluding foreign dentists from France. "I demand," he said, "that Frenchmen's teeth shall be extracted by Frenchmen." The French deputies, however, did not desire that privilege, and rejected the ex-Boulangist's proposal without a division.

ADAMKIEWICZ has recently announced before the Academy of Sciences of Vienna a treatment for cancer, by which the metastatic infiltrations are rapidly removed, and the primitive growth is caused to sphacelate with a tendency to complete cure. His method is not yet made public, but is promised soon. Are we to have another famous fiasco?

The Provident Hospital, maintained by the colored people of Chicago, was opened May 4th at the corner of Dearborn and Twenty-ninth streets. At present it has twelve cots. The staff is a strong and well-selected one, numbering among others Drs. R. N. Isham, D. H. Williams, Frank Billings, W. W. Jaggard, W. T. Byford and H. M. Starkey.

The Committee on Public Health of the Massachusetts Legislature recently passed a resolution that the State Board of Health should undertake an investigation into the dangers to human life and health arising from tuberculosis in the food-products of cattle. It was recommended that authority should be given to spend a sum not exceeding fifteen thousand dollars on the inquiry.

By a recent change in the apportionment of the insane in the various Illinois State Hospitals, the one at Elgin is again opened to Cook County, which is entitled to three hundred and fifty-four beds in that institution and one thousand one hundred and ten at Kankakee; one thousand four hundred and sixty-four in all. One patient is allowed for every eight hundred and fourteen of population as shown by the eleventh census.

The Illinois State Medical Society meets in Springfield Tuesday, May 19th, at 10 A. M., and continues three days. The

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usual reduction in railroad fare is promised on the certificate plan, the certificate to be presented when the ticket is purchased. The address in the section of "Practice of Medicine" will be given by Dr. Frank Billings; of "Surgery," by Dr. John E. Owens; of "Preventive and State Medicine," by Dr. Ephraim Ingals.

The Hospital Committee of the County Board has been directed to submit plans for the erection of a contagious disease hospital. This action was brought about by the present Medical Board, backed by the recommendations of the Chicago Medical Society and many other interested organizations and individuals. It is sincerely to be desired that Chicago may soon have some place beside the pest-house where cases of contagious disease may find shelter and treatment.

Professor BRAUN VON FERNWALD, of Vienna, whose name has long been familiar to gynæcologists throughout the world as that of one of the foremost among practitioners and teachers of the obstetrical art, passed away on March 28th, after a short illness, in the seventieth year of his age. He was born at Vienna, and took his M.D. degree in the University of that city in 1847. He became *Privat-docent* in 1853, and not long after was appointed Professor in the School for Midwives at Trent. He was called to the Chair of Midwifery in the University of Vienna in 1857, and was elected Dean of the Medical Faculty in 1867 and again in 1871, and filled the office of Rector of the University in 1869.

It is said that Chicago is to have a new institution known as the German College of Medicine and Obstetrics, with a capital stock of fifty thousand dollars. The college will have ten professors, four to teach in the English language and make a specialty of obstetrics; the other professors will teach in German and have charge of the regular college course. Five years of study will be required before a diploma is granted. It is thought that eventually a college building will be erected near Humboldt Park. The money required will be provided by the incorporators and by the professors who are to occupy the chairs in the college. The professors have not yet been selected.—*Medical News*, Philadelphia, November 25th, 1890.

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The Budget Committee of the Prussian Chamber of Deputies has approved of a grant of one hundred and sixty-five thousand marks towards the establishment of an Institute for the study of infective diseases under the direction of Professor Koch. On March 12th the Berlin Municipal Council voted the sum of two hundred thousand marks towards the erection, on grounds belonging to the Corporation, of a Convalescent Home for tuberculous patients who have been relieved or cured in any of the city hospitals. The resolution is so worded as not to limit the benefits of the institution to patients treated by any particular method.

Dr. William F. Smith, No. 204 Dearborn street, died at 12:15 o'clock, April 7th, 1891, of blood-poisoning, brought on by acute inflammation of the bowels. He was born in 1845 in Urbana, Ohio, graduated in medicine at the Miami Medical College, and completed his studies at Paris and Heidelberg. He was assistant of the celebrated oculist, Dr. Williams of Cincinnati, and *chef de clinique* of Professor Wecker during his residence at the French Capital. Dr. Smith also served as a volunteer during the late war. He came to this city eight years ago, and soon acquired a large and lucrative practice as an eye and ear specialist. He was ophthalmic surgeon to the Cook County, Alexian, and Emergency Hospitals, and was a member of the Union League Club and the Veteran Union League.

Changes in Rush Medical College Faculty: Dr. Daniel R. Brower has been elected Professor of Mental Diseases, Materia Medica and Therapeutics. Dr. Sanger Brown has been elected Professor of Hygiene and Medical Jurisprudence. Dr. Nicholas Senn has been elected Professor of the Practice of Surgery and Clinical Surgery. Dr. J. B. Murphy has been elected Lecturer on Surgery. Drs. J. B. Herrick and J. H. Salisbury have been elected Adjunct Professors of the Practice of Medicine. Professor Locy, of Lake Forest University, has been offered the Chair of Physiology. Professor Henry M. Lyman has been elected Treasurer of the Faculty. It has been decided that after the session of 1894 and 1895 all candidates for admission to the College must either be graduates of High Schools or Literary Colleges, or present satisfactory evidence of a High School education.

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The thirty-fourth annual commencement of the Chicago Medical College and the second of the Northwestern Dental College was held at Central Music Hall Tuesday, April 28th. Sixty-nine young men received the degree of Doctor of Medicine and four the degree of Doctor of Dental Surgery. Professor N. S. Davis, the Dean of the Faculty, announced the prizes. The Fuller prize of twenty-five dollars for the best thesis was given to Edward Crane Miller, Joseph Bolivar DeLee receiving second honor. The Ingalls prize of one hundred dollars for general scholarship a committee consisting of Professors Webster, Johnson and Long awarded to Arthur Robin Edwards, and the Jones prize of fifty dollars for the next grade of merit was conferred upon Daniel Nathan Eisendrath. The graduating exercises of the college closed last Tuesday night at the Leland Hotel by the banquet tendered the alumni by the faculty. Professor Edmund Andrews presided. A valedictory was addressed to the faculty and the class by Dr. A. R. Edwards.

The evidence recently given before Sir Lyon Playfair's Committee on British and Foreign Spirits fully confirms the statements made in Mr. Ernest Hart's address on ether-drinking. Some of these statements were questioned at the time in the public press, but it is now clear that the prevalence and injurious nature of the practice was under- rather than over-estimated. The Rev. Dr. Carter, Rector of Cookstown, stated in his evidence on March 10th that in his district ether-drinking was not a rarity, but a common practice, and was on the increase. It had even extended to children, who obtained it from beggar women who tramped the country with a bottle of ether in their pockets. They exchanged the drug for eggs, and it thus came about that children frequently came to school smelling strongly of ether. On market days, the witness stated, a great number of people kept themselves drunk all day for sixpence. They took two pennyworth of ether at ten o'clock, again at one, and again at four. He also stated that ether was now sold more by grocers than by chemists, who were to some extent deterred by the Sale of Poisons Act. Mr. Wilkinson, Secretary of the Irish Temperance League, and Mr. Thomas M'Kenzie Ledlie, a Dublin journalist, gave similar evidence.—*British Medical Journal.*

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CHICAGO PASTEUR INSTITUTE, second report, May 1st, 1891. Since the opening of the Chicago Pasteur Institute (July 2d, 1890) fifty-five persons have received treatment. Thirty-one came from Illinois, ten from Iowa, four from Indiana, two from Ohio, two from Minnesota, one from Missouri, one from Tennessee, two from Kentucky, one from South Dakota, one from Arizona. Thirty-six were male, and nineteen female. The youngest patient was two and one-half years old and the oldest fifty-six. Fifty-one were bitten by dogs, three by cats and one by a skunk. Thirty-one persons were bitten in the hands and arms, three in the face, and twenty in the body and legs. Twenty-four had their wounds cauterized with chemical agents and thirty-one had not. Thirty-three persons were bitten by animals recognized and ascertained as being rabid by experiments made upon rabbits, by the death of persons and other animals bitten by the same, or by symptoms shown during life; and twenty-two persons were bitten by animals strongly suspected of being rabid. All the persons treated are now enjoying good health.

A. LAGORIO, M.D., *Director.*

A bill has been introduced in the Illinois Legislature for the purpose of creating three State examining boards to "examine practitioners of medicine and surgery and prescribe their duties." These boards are to be made up as follows: "One representing the Illinois State Medical Association, one representing the Eclectic Medical Society of Illinois, and one representing the Illinois Institute of Homœopathy," each to consist of nine members appointed by the Governor for three years from a list of nominees prepared by the various societies mentioned. No one connected with any medical college and no officer of an alumni society is eligible for the position. These boards shall examine persons applying for certificates to practice medicine or surgery, the Homœopaths to examine those of their persuasion, the Eclectics those of their sort and the board from the Illinois State Medical Association all the rest. Upon proper application with the certificate of one of these boards, the Secretary of the State Board of Health must grant a certificate to practice medicine, etc., "but in no case shall examinations be conducted by the State Board of Health." The boards shall exact a fee of fifteen dollars, not returnable, shall make their own rules in reference to examina-

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tions, pay their expenses out of funds so accruing and divide the surplus among themselves pro rata according to number examined by each. The subjects upon which applicants are to be examined are, according to this brilliant piece of proposed legal tomfoolery, "anatomy, physiology, hygiene, chemistry, surgery, obstetrics, including gynæcology, pathology, practice of medicine and materia medica."

Obstetricians will be surprised to learn the contemplated legal extension of their branch of medicine. This bill is aimed at the State Board and its eminent Secretary by an unrecognized institution in St. Louis. It is sincerely to be hoped that the effrontery of such efforts may meet with the reception it deserves, and the magnificent work of the Board be properly recognized. Of the futility of establishing three sets of medical requirements it is needless to speak.

The third day's session of the American Medical Association was devoted principally to the report of the committee on nominations. Dr. H. Q. Marcy, of Boston, was nominated as president, Dr. Willis P. King, of Kansas City, Mo., first vice-president; Dr. William B. Atkinson, of Philadelphia, secretary; Dr. Richard J. Dunglison, of Philadelphia, treasurer; Dr. W. W. Dawson of Cincinnati, Dr. W. W. Potter of Buffalo and Dr. J. B. Rouch of Chicago, members of the board of trustees.

Detroit was agreed upon as the place for the next meeting.

Much antagonism has prevailed over the proposed removal of the *Journal* from Chicago to Washington. The western doctors made such a strong fight that the idea of changing the place of publication has been abandoned and Chicago will remain the headquarters of the *Journal*. A movement was made to take the control of the *Journal* out of the hands of Dr. Hollister and Mr. White, but at the meeting to-day a resolution was offered to extend a vote of thanks to the trustees of the *Journal* for the excellent manner in which the paper has been conducted. The resolution was adopted, thus leaving the journal under its present supervision.

A committe of five will be appointed to ask Congress to create a new cabinet office to be known as Secretary of Public Health

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The duties of such office will be to look after the sanitary condition of the country. A few minor resolutions were offered and the meeting adjourned till to-morrow morning.

The following is a copy of preamble and resolutions adopted at the fortieth annual meeting of the Illinois State Medical Society held at Chicago in May, 1890:

"WHEREAS, There are, on a moderate computation, not less than two thousand insane persons in the State of Illinois who are inadequately provided for, and constantly liable to suffer neglect and abuse in the poor-houses and jails of the different counties, as shown by numerous recent investigations; and

"WHEREAS, Such helpless persons, as a matter of common humanity, require kind and intelligent treatment; be it

Resolved, 1st, That the Society should take immediate steps to secure, at the forthcoming session of the legislature, such legislation as will provide—

"1. Accommodations for all who are now in jails and poor-houses as speedily as the resources of the state will admit of.

"2. Sufficient separate accommodation for all the insane criminals.

"3. Such modification of the jury law of commitment as will prevent unnecessary hardship to the insane and their friends, and obviate the delay in commitment which now occurs and prevents the treatment in the early and curable stage.

Resolved, 2d, That all district and local medical societies in the state, and other interested organizations, be solicited to coöperate with this Society in this work.

"*Resolved*, 3d, That a committee of five be appointed to carry out these objects."

The President appointed as the committee, Drs. Ephraim Ingals, 34 Throop Street, Chicago; Richard Dewey, Kankakee, Ill.; George N. Kreider, Springfield, Ill.; J. P. Mathews, Carlinville; Charles W. Earle, 535 Washington Boulevard, Chicago.

This committee is actively at work, and will make an interesting and valuable report at the coming meeting. It is hoped the desired legislation may be secured.

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REPORT OF THE CHICAGO HEALTH OFFICE.

FOR APRIL, 1891.

Population, 1,200,000.

DEATHS.		DEATHS—CONTINUED.	
Measles	43	Bronchitis	225
Scarlet Fever	39	Capillary Bronchitis	49
Diphtheria	51	Pleurisy	4
Pertussis	15	Congestion of Lungs	18
Typhoid Fever	136	Phthisis Pulmonalis	231
Influenza	120	Violence	99
Pneumonia	548	Suicide	12

Children under five years of age	1,109
Total deaths from all causes	3,450
Ratio per thousand of population	34.50
Ratio per thousand of population, April, 1890	16.02

CASES REPORTED.

Diphtheria	87
Scarlet Fever	264

METEOROLOGICAL SUMMARY.

FOR APRIL, 1891.

MEAN BAROMETER	30.002
Highest Barometer, April 4	30.283
Lowest Barometer, April 30	29.722
MEAN TEMPERATURE	47.0
Highest Temperature, April 26	75
Lowest Temperature, April 4	23
Greatest daily range of Temperature, April 13	30
Least daily range of Temperature, April 7	4
Total excess in temperature during month	36°
Total excess in temperature since January 1st	200°
Prevailing direction of wind	N. E.
Total movement of wind, miles	12,043
Extreme velocity of wind, direction, April 20	50; S.E.
TOTAL PRECIPITATION.....inches	3.74
Number of days on which .01 inch or more of precipitation fell	15
Number of cloudless days	10
Number of partly cloudy days	10
Number of cloudy days	10

H. C. FRANKENFIELD,
Sergeant U. S. Signal Corps, CHICAGO, ILL.

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THE

CHICAGO MEDICAL RECORDER.

Journal of the Chicago Medical Society.

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Original Articles.

AWAY WITH KOCH'S LYMPH!

BY N. SENN, M.D., PH.D., CHICAGO, ILLINOIS.

Professor of Practice of Surgery and Clinical Surgery in Rush Medical College; Attending Surgeon Presbyterian Hospital.

Read before the Chicago Medical Society May 18th, 1891.

When, six months ago, the telegraph operator at Berlin touched the key of his instrument and flashed to all parts of the civilized world the joyful tidings that a cure for tuberculosis had at last been discovered, the people and the profession felt that the millennium in medicine had come. For days and weeks the public press devoted a liberal space to telegraphic messages, editorials, and interviews with medical men relative to the new treatment. For months the medical journals in all countries rivaled each other in bringing the latest reports from Berlin and other large medical centres in the way of telegrams, correspondence, editorials, and original contributions.

The first announcement of the discovery brought thousands of patients and doctors to the German capital, the former to be cured of their tubercular disease, the latter to receive instruction

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and to make themselves proficient in all the details of the new treatment. No other event in the world's history ever attracted so much attention, and no discovery in medicine or surgery ever found such ready introduction and universal acceptation. The discoverer, the distinguished Koch, the father of bacteriology, had scored so many victories on this modern field of research that every word he uttered brought conviction. His views were promptly adopted by the most prominent physicians and surgeons in Germany and other countries, and the new treatment was applied everywhere by the best men in the profession as fast as the precious remedy could be obtained.

Within a few weeks the most enthusiastic and encouraging reports came from scores of prominent clinics and large hospitals. Within a few months volumes have been written on this subject; several special works on this treatment left the press and were translated into many languages. A new journal devoted exclusively to the treatment of tuberculosis with Koch's lymph has come into existence and has a good subscription list from the very start. It is true that some of the more conservative members of the profession were a little slow in accepting the new doctrine and practice, but the great majority followed the current set in motion by the great Koch and his many eminent admirers and devoted followers.

It was not long, however, before the glowing accounts of the results of the new treatment of tuberculosis came at longer intervals and in a more moderate tone, and were interspersed with the reports of cases from different parts of the world in which it proved a complete failure, and not in an inconsiderable number of cases it was charged with having caused a speedy fatal termination. Then came the timely warning of the veteran pathologist, Virchow, who showed by numerous post-mortem examinations of patients who died under this treatment that death was caused by dissemination of the disease from a local focus acted upon by the lymph. The evidences proving this source of danger have been rapidly accumulating, and contributed largely towards subduing the first enthusiasm and limiting the scope of administration of the remedy.

The disastrous consequences which followed the use of the lymph, perhaps often injudiciously and recklessly applied,

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induced a number of medical societies to condemn its use, and led some of the local governments to restrain its further application by legal enactments.

Enough time has now elapsed to judge of the merits of the treatment of tuberculosis by Koch's lymph, or, as it is now called, tuberculin. It has been put to test in the treatment of all forms of tuberculosis.

Surgeons, physicians, gynecologists, obstetricians, dermatologists, otologists and ophthalmologists have given the new treatment a fair trial, and the accumulated experiences from all these sources have shown beyond all doubt that its indiscriminate use is attended by many immediate and remote dangers, and that most cases in which it appeared to prove beneficial at first have relapsed, and after weeks and months were no better, or even worse, than when the treatment commenced.

Men who first regarded the lymph as a specific in all forms of tuberculosis make this claim no longer. Many who were enthusiastic in their praise of what they observed from the use of the remedy in the beginning have now suspended its use. Hospitals and wards set aside for the special treatment of patients suffering from tuberculosis are now deserted. The market is over-stocked with a supply of Koch's lymph and Koch's syringes. Not only the profession but the public has become aware that the claims made for the remedy only a few months ago are unfounded. It is left for Koch, or some other investigator in the future, to discover a substance or agent which will answer the expectations that were at first entertained for the lymph.

Koch's lymph has been a deceptive bubble which for a short time commanded the attention and admiration of the whole world, but which has been ruthlessly pricked by the critical scalpel in the hands of the father of modern pathology. The treatment of tuberculosis with Koch's lymph and the numerous substitutes which have recently been forced on the attention of the profession will soon be only a matter of history. My "Away With Koch's Lymph!" is based upon my own observations made at the Milwaukee Hospital during the last four months' service in that institution prior to my removal to this city. The material is not large, but the careful observations made entitle me to give a

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positive opinion and warn others against further experimentation with this remedy.

The lymph first used I received through the courtesy of Dr. J. S. Billings, of Washington, and when this was exhausted I received an abundant supply direct from Dr. Libbertz, through the influence of my distinguished friend, Professor von Esmarch. The tubercular nature of the lesions in all cases that came under my own care, if any doubt existed in this regard, was established by microscopical examination and search for the bacillus.

Tuberculosis of Skin.

As lupus of the face was mentioned in the first reports from Europe as having been cured by Koch's lymph, I was exceedingly anxious to commence treatment with this form of surgical tuberculosis. In all the cases reported below the local and general reaction was typical and corresponded with the descriptions given by von Bergmann, von Esmarch and others.

Case 1. *Lupus of face and nose; tuberculosis of right tarsal and ankle joints; incipient tuberculosis of left wrist joint.*

Augusta Jehnki, aged forty-four, German, married, was admitted to the Milwaukee Hospital January 22d, 1891, with the following history:

Tuberculosis not hereditary in her family. Eighteen years ago the left nasal passage became partially obstructed, rendering breathing through that side of the nose difficult. The affection commenced, as near as she can remember, in the form of a papillomatous swelling, involving the mucous membrane of the ala near its junction with the skin. At first no pain and no discharge from the nose. The swelling slowly increased in size, softened in the center, leaving an ulcerated surface which was usually covered with a dry crust. As soon as ulceration set in the disease extended rapidly to all of the structures of the nose and later to the soft palate, pharynx, and face. In the course of a few years almost the entire nose and a considerable portion of the nasal septum were destroyed. The ulcerated surface healed over, the scars almost completely occluding the nasal apertures on a level with the skin of the face.

The patient states that after destruction of the nose the disease first extended to the right cheek and later to the left side.

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On the left side the eye became involved, sight being almost completely destroyed. The upper lip became involved six years ago. The skin of the face never ulcerated extensively; circumscribed superficial erosions would form from time to time which healed under a crust, always leaving a thin red cicatrix. A year ago the right ankle and tarsal joints became tender and swollen.

On admission the patient presented a somewhat anæmic appearance, general nutrition impaired. No evidences of the existence of pulmonary tuberculosis. Remnant of nose covered with thin red glistening scar. Nasal apertures nearly closed. Both cheeks and upper lip swollen, the skin covering them exceedingly vascular with here and there small defects covered with thin dry crusts. Left cornea opaque throughout. Nearly the entire soft palate absent and sides of pharynx in a state of ulceration. Right ankle and tarsal joints present the typical appearances of synovial tubercular arthritis.

The following table shows dates, doses of the lymph administered, and its effect upon the temperature and pulse:

Number of Injections.	Date.	Dose in Milligrammes	Temperature before Injection.	Temperature during Reaction.	Temperature after Reaction.	Pulse before and during Reaction.
1	Jan. 23	3	98.9°	103.8°	98.2°	80 120
2	" 26	4	98.2	102	99	78 120
3	" 28	5	98.2	102.2	98	76 120
4	Feb. 3	4	97	101.6	97	74 116
5	" 5	4	97	98.4	96.8	82 92
6	" 7	5	97	92.2	97.6	82 90
7	" 10	10	98	102.2	97	88 120
8	" 14	8	97	101	97.4	76 104
9	" 17	4	98	99.4	98.4	80 96
10	" 21	8	98	106.6	98	82 105
11	" 24	6	97.8	99	97	72 90
12	" 28	6	97.4	92.2	97.6	68 85
13	Mar. 2	6	97.6	100.4	97.6	76 89
14	" 5	6	97.6	100.6	97.6	72 90
15	" 11	6	97.6	100.6	97	76 100
16	" 21	2	97	100.8	97	92 74
17	" 25	4	97	101.8	97	84 108

During the reaction following the first dose the left wrist-joint became greatly swollen and very painful, but this condition lasted only for a day. The swelling and pain in the right foot also were greatly aggravated during and for some time after the reaction. The cheeks and upper lip became the seat of an active inflammation which resulted in great swelling and transudation of a serous fluid which on drying left nearly the whole surface covered with

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a yellowish crust. The local reactions gradually diminished in intensity, and almost ceased about the middle of February. The highest temperature, 106.6° F., was observed following the injection of eight milligrammes, February 21st. The temperature usually commenced to rise about three to four hours after the injection and reached the highest point about three hours later. The temperature was often found subnormal eighteen hours after the injection.

I was forced to abandon the treatment at the end of March, as the patient had become greatly emaciated and extremely anæmic, and the local lesions which in the beginning of the treatment had apparently undergone marked improvement had relapsed, presenting about the same conditions as when the treatment was begun. The skin covering the lupus remained red throughout, and showed no signs of fading when the patient left the hospital. During the latter part of February the susceptibility to the action of the lymph appeared to have been nearly exhausted, as injections of six milligrammes produced only a slight rise of temperature, but this returned later as the last injection of four milligrammes, March 25th, was followed by a temperature of 101.4° F.

Case 2. *Lupus erythematosus of right cheek and external ear.*

Dora Presentin, widow, aged forty-nine, entered the Milwaukee Hospital February 5th, 1891, for the purpose of submitting to a course of treatment with Koch's lymph for a lupus of the right cheek. No hereditary tendency to tuberculosis in her family. General health excellent. The skin affection commenced in the middle of the right cheek when she was twelve years old. She first noticed a prickling smarting sensation at the site of an elevated red patch about the size of a dime. This was treated by applications of preparations of iodine without benefit. The cuticle exfoliated leaving a raw surface which became covered with a thin dry crust. At the age of fourteen, the sore healed, and with the exception of a prickling sensation at times, remained well for three years, when the sore spot again inflamed and the same conditions returned, and from that time the affection continued to extend over the right cheek, and during the last few years it has involved the lobe of the ear on the same side. Like in the preceding case, great improvement has always taken place during the summer

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months. The right cheek and external ear are of a bright red color, the disease evidently being limited to the superficial layers of the skin, as there is little or no swelling of the affected parts. Occasionally thin crusts form over circumscribed patches where exfoliation has taken place. She was at once treated by injections with Koch's lymph with results shown in following table:

Number of Injections.	Date.	Dose in Milligrammes.	Temperature before Injection.	Temperature during Reaction.	Temperature after Reaction.	Pulse before and during Reaction.	
1	Feb. 5	2	98.4	99	98.3	76	80
2	" 7	4	98.3	100.2	97.3	82	90
3	" 10	4	98.5	99.9	98.3	74	80
4	" 14	4	98.4	102.7	97	80	100
5	" 19	2	98.4	100.3	98.4	74	100
6	" 21	2	98.3	99	99	74	80
7	" 24	4	98.4	100	97.5	76	88
8	" 28	6	97.5	99.1	98	68	84
9	Mar. 2	8	98.4	101.1	98.4	78	93
10	" 5	10	98.4	101.2	97.9	84	90
11	" 10	10	98.4	99.9	97.5	68	90
12	" 13	10	98.1	98.9	98	69	72
13	" 16	10	99.1	102	98.4	75	82
14	" 20	10	98.4	99.5	98.4	72	76

The local reaction was always prompt in this case even when a small dose was used. The whole surface of the lupus became acutely inflamed, the copious transudation on inspissation forming an almost continuous, thin yellow crust. The intensity of the local symptoms gradually subsided, but the surface remained red and vascular to the end of the treatment, so that when she left the hospital the improvement, if any, was very slight. I have examined the patient on several occasions since she left the hospital, but no material change has taken place in her condition. The general reaction in this case was much milder than in the preceding one, and with the exception of becoming more anæmic and having lost several pounds in weight the treatment left no further ill effects.

Case 3. *Lupus hypertrophicus of face; tuberculosis of submaxillary and cervical glands.*

Edward Rohrer, aged fifteen years, came to the hospital to undergo a course of Koch's treatment for lupus of the face February 21st, 1891. His mother died of lupus of the cheek and pulmonary phthisis when he was three years old. Out of a family of nine children, six have died of some form of tuberculosis. Soon after the patient was born a nodule was discovered

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in the centre of the right cheek. This was removed by caustics, but the resulting ulcer never healed. The disease extended quite rapidly over the entire cheek and later attacked the nose, the greater part of which was destroyed; finally it reached the left eye, the sight of which was completely destroyed when he was five years old. At the time he presented himself for examination and treatment the left submaxillary and cervical lymphatic glands were enlarged, showing conclusively that the tubercular lesion of the face had given rise to secondary glandular infection. The soft tissues of the nose had nearly disappeared, the mucous membrane of the nasal passages swollen and in places ulcerated, the lining of the external apertures covered with a dry crust. The whole face, forehead and both lips enormously swollen, the skin a dusky hue, and in spots covered with dry crusts; the swollen parts were very hard to the touch, the infiltration evidently extending beyond the structures of the skin. Numerous hard nodules could be felt over the whole infected area; no trace of eyelashes and eyebrows on either side. All of the eyelids slightly ectropic and otherwise distorted. Appetite good, general condition fair.

Before treatment was commenced the temperature was 97° F. He received the first injection of one-half of a milligramme of tuberculin the day he came into the hospital, which in four hours brought the temperature up to 101.2°, and it had not returned to normal after twenty-four hours. During this time he complained of headache, pain and a sense of burning in the affected parts, which had become much more swollen and red. The same profuse transudation appeared on the surface as in the other cases, forming a thin yellow crust which covered the greater part of the surface. The following table gives the number of injections and their immediate general effects:

Number of Injections.	Date.	Dose in Milligrammes.	Temperature before Injection.	Temperature during Reaction.	Temperature after Reaction.	Pulse before and after Reaction.	
1	Feb. 21	½	97	101.2	100.2	81	99
2	" 23	1	100.2	100.3	97	99	120
3	" 28	2	97	99.4	98	90	106
4	Mar. 2	3	98	103	97.8	78	108
5	" 5	3	97	102	98.4	78	102
6	" 9	3	97.8	102.5	98	75	105
7	" 12	3	98.8	100	98.6	90	106
8	" 16	3	99.4	101	99.7	88	102
9	" 21	3	98.2	101	97.4	80	102
11	" 25	3	99.2	100.4	98	90	98

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The enlarged glands became more swollen and tender after the first injections; later the local reaction ceased. During the first three weeks the condition of the face appeared to be undergoing a decided change for the better. As the local reaction diminished and the crusts exfoliated, the swelling diminished considerably and the hardness partly disappeared, and, at the same time, the skin presented a more natural appearance. During the latter part of March, however, improvement came to a standstill and the parts gradually returned to their former conditions. The treatment has been continued until recently, and when I saw the boy a few days ago I became satisfied that his general health and strength had failed greatly since I first saw him, and the face showed no improvement whatever.

Case 4. *Tuberculosis of skin in both infra-patellar regions.*

Mary Howard, aged forty-three, married, housewife, was sent to the Milwaukee Hospital to be treated for an affection of the skin in both infra-patellar regions. No hereditary predisposition to tuberculosis in the family. General health excellent. Six months ago, without any apparent cause, she experienced pain and tenderness in the skin in the region of the left knee-joint at a point corresponding with the lower margin of the patella. A few days later she discovered two or three nodular swellings in the skin which slowly increased in size until they became as large as a split pea. The skin covering these swellings assumed a bluish color, when softening in the center of each nodule occurred, which resulted in the formation of small ulcers covered with flabby granulations. New nodules made their appearance in the same neighborhood and passed through the same stages. In two or three places several of these nodules became confluent, forming indolent ulcers the size of a nickel. Some of these ulcers healed, but the new skin never assumed a healthy color, remaining very vascular and of a brownish tinge.

A few weeks before she came under my observation the same affection appeared on the opposite side and in about the same locality. At the time she entered the hospital about six nodules were found in the skin of the left infra-patellar region, some of them in a state of ulceration, others covered with dusky skin, while the most recent ones could be felt as circumscribed indurations in the deeper structures of the skin. The nodules below

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the left knee, three in number, had not ulcerated. As the diagnosis was somewhat obscure fragments of granulation tissue were removed, stained, and examined under the microscope with the result that numerous tubercle bacilli were found within and between the giant and epithelioid cells. The ulcers were dressed with iodoform and treatment with Koch's lymph was at once commenced. The nodules and ulcers responded promptly to the injections, becoming swollen, vascular and tender after each injection. The temperature never reached quite 100° F., although the dose was gradully increased to ten milligrammes.

Number of Injections.	Date.	Dose in Milligrammes.	Temperature before Injection.	Temperature during Reaction.	Temperature after Reaction.	Pulse before and during Reaction.	
1	Feb. 3	2	98.4	99.8	98	74	82
2	" 5	2	98	99.2	97.8	72	80
3	" 7	3	98.8	99.6	98	68	84
4	" 10	6	98.2	99	98	68	84
5	" 14	6	98	99.2	98.2	82	88
6	" 19	6	98.4	99.6	99.2	84	108
7	" 21	8	99	98.6	99.4	84	100
8	" 24	8	98.4	99.6	98.2	72	98
9	" 28	8	98.2	99.2	97	84	66
10	Mar. 2	8	98.2	99	97.8	96	60
11	" 5	10	98.4	99	98.4	84	66

During this treatment the nodules covered with intact skin first became swollen, hard and painful, and then gradually disappeared. The ulcers soon assumed a more healthy appearance, the granulations becoming more vascular and firmer, followed by speedy epidermization. At the time the injections were suspended all of them had healed, and I flattered myself that a cure had been obtained, and allowed the patient to leave the hospital. Three weeks later I saw her again and found her in about the same condition as when the tuberculin treatment was commenced.

Tuberculosis of Joints.

It has been claimed by a number of eminent surgeons that in the absence of caseous foci and sequestra tubercular joints are amenable to successful treatment by lymph injections, and that in a fair percentage of cases not only a cure can be effected, but a perfect functional result obtained. The same authorities also maintained that in the event the disease had advanced to the formation of caseous deposits or sequestration the same treatment by limiting the extension of the tubercular process, would place

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the parts in a more favorable condition for subsequent successful operative interference. Although my experience with Koch's lymph in this class of cases has been limited to three cases it has taught me that neither of these claims are well founded.

Case 5. *Synovial tuberculosis of knee joint; intra-articular injections of iodoform emulsion followed by Koch's treatment.*

Maria Gierswska, aged eighteen, born in Poland, housemaid, came under my care at the Milwaukee Hospital January 11th, 1891. No hereditary tendency to tuberculosis in the family. Patient is fairly well nourished, but somewhat anæmic. She has been a servant girl for several years and was required to do a greal deal of scrubbing, and to this part of her work she attributed a pain in the right knee-joint which made its first appearance about two years ago. The pain was worse at night, but did not prevent her from following her occupation until six months ago. At that time she noticed that the joint was swollen and tender on pressure. The swelling increased rapidly in size and the movements of the joint became impaired. Examination of the joint revealed the presence of a copious effusion with thickening of the capsule. No circumscribed points of tenderness over epiphyseal extremities of the tibia and femur. Patient can walk without the aid of crutches.

On January 12th, the joint was aspirated and six ounces of synovial fluid in which small fibrinous shreds were suspended was removed, after which an intra-articular injection of a ten per cent emulsion of iodoform in glycerine was made. The patient was allowed to use the limb. In the evening the temperature, which had been normal before the injection was made, rose to 102.8° F., but was again found normal the next day. At the end of forty-eight hours the joint was swollen as much as before the aspiration. On January 17th aspiration and injection were repeated. No decided improvement had taken place, when the tuberculin treatment was commenced January 22d. The highest temperature produced by the first injection was reached at the end of two hours. On the following day the swelling had increased, the capsule was tense, and the joint tender and much more painful than after the iodoform injections. The injection of six milligrammes of tuberculin made January 26th was followed

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at the end of twelve hours by a temperature of 105.8° F., the highest temperature recorded in this case.

The patient complained of headache and pain in the region of the stomach and spleen attended by diarrhœa.

Number of Injections.	Date.	Dose in Milligrammes.	Temperature before Injection.	Temperature during Reaction.	Temperature after Reaction.	Pulse before and during Reaction.
1	Jan. 22	2	96.6	100.8	100	80 90
2	" 23	4	100	103	99	96 112
3	" 25	2	99	102.2	99	70 106
4	" 26	6	99	105.8	99	84 144
5	" 28	5	99	105	100.4	100 144
6	Feb. 3	6	98	105	99	82 140
7	" 5	2½	99	100.4	99.2	96 100
8	" 7	3	99	99.8	99	76 86
9	" 10	6	98.2	103	98	76 108
10	" 14	6	98	99	98	74 84
11	" 19	5	98	99.4	98.4	72 90
12	" 21	6	98.4	99.4	98.4	76 80
13	" 24	6	98.4	99.6	98	72 96

The local and general reactions in this case were pronounced, but both subsided gradually during the treatment. While in the beginning of the treatment the temperature rose to nearly 106° F., the last injection of six milligrammes was followed by only a little more than one degree of rise in the temperature. During the time the patient received this treatment, she lost much in flesh and became very anæmic. She left the hospital February 26th, and at that time the joint was not much swollen and I confidently expected a permanent improvement. She returned in two weeks, when the effusion had returned to about the same extent as when the treatment was commenced. As I had lost faith in the Koch remedy in the treatment of this class of tuberculosis, I returned to the treatment by intra-articular injections of iodoform.

Case 6. *Tuberculosis of left knee-joint.*

William Gabl, thirty years of age, laborer, became an inmate of the Milwaukee Hospital, March 9th, 1891. No history of tuberculosis in his family. Had been in good health until nearly a year ago, when, without injury or any other apparent cause, he was taken with a pain in the left knee-joint, and in less than twelve hours it became enormously swollen and exceedingly painful. He was forced to abandon his work and seek rest, which in a few days brought about a marked improvement; the swelling

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disappeared almost completely, and the slight pain and soreness in the joint, which then existed, did not prevent him from following his occupation. From this time on, however, the knee was never entirely well, a number of slight attacks similar to the first, occurring during the summer months. Since November, he has been unable to work, the swelling remained permanently, being most marked at the upper recess of the synovial sac and on each side of the patella, The pain has never been severe when the limb is at rest, and until recently, the patient has been able to walk without the aid of crutches.

On admission the patient was anæmic and had lost about twenty-five pounds in weight during his illness. A physical examination of the chest yielded a negative result. The left limb is atrophic. The swelling of the knee-joint, which is considerable, appears to be due entirely to thickening of the synovial membrane, there evidently being no effusion in the joint. Patient can flex and extend the leg nearly as well as the opposite one. The temperature was normal before the first injection was given, but within six hours the thermometer registered 104.7° F. in the axilla.

Number of Injections.	Date.	Dose in Milligrammes.	Temperature before Injection.	Temperature during Reaction.	Temperature after Reaction.	Pulse before and during Reaction.	
1	Mar. 9	2	98.4	104.7	98.2	81	108
2	" 12	2	98.2	101.8	98.4	78	96
3	" 16	2	99	102.3	98	66	84
4	" 21	2	97.8	99.6	97.8	72	90
5	" 25	2	99	99.9	99	76	80

The local reaction was prompt after every injection, consisting of increased swelling, pain, and tenderness. After the fourth injection the physical signs pointed to the existence of a moderate effusion in the joint. During the febrile reaction, the patient suffered always more or less from headache, backache, and pain in the region of the spleen. As the general reaction appeared to have nearly ceased after the fifth injection, the Koch treatment was suspended to ascertain its ultimate effect upon the local lesion. As, a week later, no perceptible improvement had taken place, the joint was aspirated and about three ounces of a synovial fluid, in which minute fibrinous flocculi were suspended, removed, and an ounce of a ten per cent. iodoform emulsion

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injected. The Bruns' treatment is being continued with a fair prospect of an ultimate recovery.

Case 7. *Tuberculosis of hip-joint.*

Maggie McDermott, aged fifteen, was admitted to the Milwaukee Hospital, February 28th, 1891, to be treated for an affection of the left hip-joint. Her father died of pulmonary tuberculosis five years ago. With the exception of the usual diseases incident to childhood, the patient considered herself in good health until a year ago, when she was taken with pain in the region of the left hip joint. From that time on she has walked with a decided limp, but continued her work as a servant girl until a few months ago. The pain was always worse at night and after undergoing unusual exertion. The greatest pain is referred to the region in front of the hip-joint, but at times she complains also of a pain about the inner aspect of the knee-joint on the same side. Her general health is not much impaired. An examination of the hip-joint reveals all the characteristic signs and symptoms of tubercular synovitis following a primary focus in the neck of the femur. Extension was made by weight and pulley; at the same time she was subjected to Koch's treatment with results shown in the accompanying table.

Number of Injections.	Date.	Dose in Milligrammes.	Temperature before Injection.	Temperature during Reaction.	Temperature after Reaction.	Pulse before and during Reaction.	
1	Mar. 2	2	99	100.1	98	78	92
2	" 5	4	98	103.3	99.6	80	102
3	" 12	4	99	103.5	100.4	90	112
4	" 16	4	98.4	100.6	99	84	100
5	" 21	4	99	101	98.4	84	92
6	" 23	4	97.4	99.4	99.6	80	108
7	Apr. 3	4	98.2	100	99.4	92	104
8	" 6	4	98	100	98.2	94	100

The injections until towards the last always were followed by an aggravation of the local symptoms which usually lasted until the end of twenty-four to thirty-six hours. Rest in bed and extension had a prompt effect in diminishing the pain and tenderness, but the tuberculin injections appeared to have no influence in arresting the progress of the disease and had to be abandoned, as the patient's general condition had undergone a decided change for the worse since their use had been commenced.

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OTITIS MEDIA TUBERCULOSA.

Case 8. *Pulmonary and laryngeal tuberculosis; tuberculosis of middle ear on both sides, and of the mastoid process on the right side.*

Charles W. Mueller, aged thirty-five, German, farmer by occupation, came under my care at the Milwaukee Hospital, December 10th, 1890. Tuberculosis is hereditary in his family, and he gives a history of pulmonary tuberculosis dating back for a year and a half. About six months ago he became hoarse, a symptom which gradually increased in severity until he came to the hospital, when his voice was a mere whisper. Two months later his ears became affected, the first indication of this trouble being a roaring, buzzing noise attended by slight pain and followed by increasing deafness. The patient is considerably emaciated, but his appetite and digestion have been good. Examination of the chest reveals extensive infiltration of the right apex of the lung with a number of small cavities. The laryngoscope shows numerous nodules at the base of the epiglottis and upon the vocal cords, œdematous infiltration, and at some points minute foci of caseation and ulceration; drum of the ear on both sides perforated and covered with fungous granulations; on the right side, over the mastoid process and a considerable distance above and behind it, the skin is reddened and undermined by an extensive tubercular abscess.

The abscess was incised and its interior, which was lined with a thick layer of granulation tissue, was scraped out with a sharp spoon, and after thorough irrigation was tamponed with iodoform gauze. Almost the entire external surface of the mastoid process was denuded of periosteum. Granulations taken from the interior of the abscess and from the external ear examined under the microscope contained numerous tubercle bacilli. The external ear on both sides was disinfected, iodoformized and loosely packed with absorbent cotton. Under this treatment some improvement was noticeable until the tuberculin treatment was initiated. This patient received the first dose of Koch's lymph administered in the Milwaukee Hospital. Gradually increasing doses were given until the maximum dose, twenty-five milligrammes, was reached, as both the local and general reactions were not well marked. As soon as the dose exceeded ten milli-

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grammes a diarrhœa set in which it was found difficult to control, and which greatly reduced the strength of the patient.

Number of Injections.	Date.	Dose in Milligrammes.	Temperature before Reaction.	Temperature during Reaction.	Temperature after Reaction.	Pulse before and during Reaction.	
1	Jan. 21	2	99	102.2	98.6	84	96
2	" 23	4	98	101	99	80	100
3	" 25	6	98	100.8	98.4	94	100
4	" 27	10	98	102	99.2	86	106
5	" 29	15	97.2	102.6	98	82	98
6	Feb. 2	18	98.7	101.4	98.2	86	90
7	" 5	20	98.4	102.8	98.8	82	94
8	" 7	20	99.3	100.6	99.2	88	104
9	" 9	25	98.6	102.2	98.4	84	102

During this treatment the patient lost his appetite, which in addition to the exhausting diarrhœa contributed largely to the rapid loss of flesh and strength. He left the hospital March 12th and died a few weeks later. I have no doubt that the lymph treatment shortened his life a number of weeks and perhaps months.

Tuberculosis of Lymphatic Glands.

Case 9. *Tuberculosis of glands of neck; previous operation followed by relapse; tuberculin treatment; second operation.*

Clara Struebig, aged twenty, member of a highly tuberculous family, has been ailing since childhood with what was then denominated scrofula. Both corneæ are opaque and at nine different times iridectomy has been performed. She has been the subject of glandular enlargement on the right side of the neck for several years, and November last she came to the hospital, and I removed a whole chain of glands extending from the external ear to the clavicle. The upper glands were in an advanced state of caseation; in some of them the caseous material had undergone liquefaction, transforming the interior of the glands into tubercular abscesses. The wound healed kindly and the patient left the hospital much improved in her general condition.

Within a few weeks the glands on the opposite side of the neck commenced to enlarge, and when she again entered the hospital, February 14th, 1891, I found the deep glands underneath the sterno-cleido-mastoid muscle enlarged as far as the middle of the neck and the superficial glands in the supra-

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clavicular space. On the right side the disease had returned in the lower portion of the neck where an uninterrupted chain of glands could be traced as far as the clavicle. As the Koch treatment was at that time being applied in all forms of tuberculosis, I was anxious to observe its effects on glandular tuberculosis, and as the patient was equally willing to submit to it, she received the first injection the day she entered the hospital.

The patient not being strong and somewhat anæmic, only one milligramme was injected, but even this small dose produced violent constitutional symptoms. The temperature rapidly rose from 99.4° to 102°, the enlarged glands became more swollen and tender, and pulse rate increased from 80 to 120. The patient spent a sleepless night and complained of a violent headache.

Number of Injections.	Date.	Dose in Milligrammes.	Temperature before Injection.	Temperature during Reaction.	Temperature after Reaction.	Pulse before and during Reaction.	
1	Feb. 14	1	99.6	102	98	80	120
2	" 19	1	98.2	99	98.4	84	100
3	" 21	2	99	103	98.2	98	144
4	Mar. 2	½	98.4	99.4	97.6	74	88
5	" 5	½	98.4	100	99.2	81	90
6	" 9	1	98.4	101.5	98	90	116
7	" 12	1	98	100	98.5	81	104
8	" 16	1½	98.4	99.4	98	76	88
9	" 18	2	98.4	99.2	98.2	80	88
10	" 21	2½	98	100.6	97.8	72	110
11	" 24	3	98	100.2	98.2	88	100

During this treatment the patient's appetite diminished, frequent attacks of diarrhœa set in, which, with the periodical febrile disturbance following the injections, greatly reduced her strength. The third injection was followed during the febrile reaction by aching pains all over the body, but more particularly in the lumbar region. Glands that could not be felt before the tuberculin treatment was commenced, appeared as small, hard nodules under the skin, their number increasing almost with every injection. She remained in the hospital for a week after suspension of the treatment, when the glandular swellings decreased in size and her general condition commenced to improve. She left the hospital and returned after four weeks to submit herself to a second operation. The glands on both sides of the neck were removed, an operation attended by great difficulties, as the internal jugular had to be isolated to the extent of four to six inches. The wounds healed by primary intention, and

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the patient returned to her home at the end of two weeks. Examination of the glands after extirpation showed that beginning caseation had taken place in glands not larger than a hemp seed. This early caseation was evidently caused by the action of the tuberculin.

Case 10. *Tuberculosis of cervical glands on both sides; incipient tuberculosis of right apex of lung.*

Lena Messman, aged twenty-two, entered the Milwaukee Hospital January 27th, 1891. Tuberculosis hereditary in the family. She has had a cough for several months which she attributes to a catarrhal affection of the pharynx. Six months ago she noticed a number of enlarged glands on both sides of the neck just below the angles of the lower jaw. The glands slowly increased in size and new ones appeared lower down and along the posterior border of the sterno-cleido-mastoid muscles. Her general health is materially impaired. Both tonsils enlarged and mucous membrane of pharynx the seat of a hypertrophic catarrhal inflammation. A chain of enlarged lymphatic glands on both sides of the neck extending from the angles of the jaw to the clavicles, the largest of the glands being about the size of a hazel nut, their size diminishing from above downward. On the right side most of the glands can be felt underneath the sterno-cleido-mastoid muscle along the course of the large vessels of the neck, while on the left side the superficial glands are affected. The patient came to the hospital with the expectation of having an operation performed, but as a physical examination of the chest left no doubt that the right apex of the lung was the seat of an incipient tubercular infiltration it was deemed advisable to give the tuberculin treatment a trial, to be followed, should it prove successful, by an operation later.

Number of Injections.	Date.	Dose in Milligrammes.	Temperature before Injection.	Temperature during Reaction.	Temperature after Reaction.	Pulse before and during Reaction.	
1	Jan. 27	1	99.4	99.8	98.4	84	96
2	" 31	2	99	104	98.2	88	120
3	Feb. 3	6	98.2	102.6	98	84	98
4	" 5	5	98	103.8	98	92	124
5	" 9	6	98	103.8	98.2	88	124
6	" 12	5	98.2	101.7	98.2	72	114
7	" 14	4	98.2	99.8	98.2	100	120
8	" 13	4	98	100.4	98	96	112
9	" 19	4	98	100	98.2	98	106
10	" 21	5	98.2	99.6	98.4	100	106

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During the febrile reaction which was always most marked about six hours after injection the cough was aggravated; at the same time the patient complained of soreness of the throat, pain in the chest and back; but after the first few injections the enlarged glands became more swollen, painful and tender. During this treatment the patient lost so much flesh and strength that operative interference was out of question. She remained in the hospital a week after the treatment had been suspended, but only partly regained her former strength, while the glands that could be felt were more numerous than when she entered the hospital, while those that had been previously enlarged presented more marked evidences of caseation and liquefaction of the tubercular product.

TUBERCULOSIS OF LUNG AND LARYNX.

Case 11. Otto Anderson, aged twenty-eight, was admitted to the Milwaukee Hospital January 26th, 1891. A brother died of pulmonary tuberculosis. He has had a dry hacking cough and occasional attacks of hæmoptysis for a year and a half. Six months ago he became hoarse, and this symptom has gradually increased until now he is not able to speak above a whisper. Physical examination of the chest reveals a small cavity in the right apex, and fine and coarse râles as far down as the lower border of the third rib. The sputum contained an abundance of tubercle bacilli. The laryngoscope showed that the surface of the vocal cords was freely studded with miliary tubercles, which at some points had broken down, resulting in small excavated ulcers lined with pale, flabby granulations; epiglottis nearly same condition and œdematous.

As the patient was treated at the same time by iodine inhalation it is somewhat difficult to estimate the value of the local action of the tuberculin on the laryngeal affection. During the commencement of the treatment, the laryngeal difficulty was aggravated, the tendency to cough increased, and the secretions from the larynx and pharynx more abundant and viscid. After the third injection, the ulcerations presented a more healthy appearance, the granulations were smaller and more vascular. The number of tubercle bacilli in the sputum was greatly increased.

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Number of Injections.	Date.	Dose in Milligrammes.	Temperature before Injection.	Temperature during Reaction.	Temperature after Reaction.	Pulse before and during Reaction.	
1	Jan. 26	2	98.4	101	98.4	72	98
2	" 28	6	98.6	99.4	98.4	72	80
3	" 30	9	98.4	99.6	98.3	72	74
4	Feb. 2	9	99	101	99	66	92
5	" 5	10	99.8	100	98.4	76	80
6	" 7	15	98.4	101.4	98.8	74	100
7	" 10	10	98.4	100.6	98.6	72	82
8	" 18	8	96.6	99.8	98.2	71	80
9	" 24	10	99	100.6	98.2	82	92
10	" 28	10	98.4	100	99.2	84	90
11	Mar. 3	10	98.4	100.2	97.8	86	99
12	" 5	15	98	101.2	98	88	90
13	" 9	15	97.6	99.6	98.2	72	82
14	" 12	20	98	100	98.2	72	98
15	" 17	15	98.2	100	98	82	94
16	" 20	15	98.4	100.2	98.4	74	84
17	" 25	20	98	99.5	98.2	76	90

This patient received more tuberculin than any of the cases previously reported, but notwithstanding the large doses employed the general reaction never was well marked and the patient did not lose in weight during the treatment, although at times the injections increased the tendency to diarrhœa. The improvement of the laryngeal lesion, which was apparent during the beginning of the treatment, now came to a standstill; no attempt at healing of the ulcers was observed, and when the patient left the hospital a week after the last injection was made the subjective and objective symptoms were about the same as when he entered.

Pulmonary Tuberculosis.

During the time the above cases of surgical tuberculosis were under my own care at the Milwaukee Hospital, forty-three cases of pulmonary tuberculosis were treated in the same institution by the same method by my colleague, Dr. E. Kováts. I desire on this occasion to thank him for the permission to use his material in the preparation of this paper. I had frequent opportunities to examine these cases before, during, and after treatment. The length of time the treatment was continued varied from one week to three months, on an average probably about four weeks. The doses ranged from one-half to eighty milligrammes; as a rule, they seldom exceeded five milligrammes. The injections were made every second or third day. An eruption of the skin resem-

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bling scarlatina was observed in several cases; in others herpes labialis appeared soon after injection. A general feeling of malaise, nausea, vomiting and diarrhœa were among the more common severe symptoms following the use of the remedy.

Case 1. Joseph Stark, thirty years old, admitted to the hospital January 1st, 1891. Has for several years been suffering from a chronic affection of the nose, which, upon careful examination, is found to be of a tubercular character. Has been ill for six months, and has had two attacks of hæmoptysis, one two months ago, the other two weeks before admission. Physical examination of the chest reveals infiltration of both apices. During the treatment he had an attack of hemorrhage from the lungs, and on another occasion a profuse diarrhœa followed the tuberculin injection. On left side the disease extended, but the general condition appeared to be somewhat improved when the patient left the hospital at his own request.

Case 2. Joseph Minz, aged thirty-five, entered the hospital February 5th, 1891. The history of pulmonary disease dates back four months. Dullness on percussion over left apex anteriorly, and fine crepitation on deep inspiration; same physical signs over posterior portion of right apex. During the treatment dullness and diminished respiratory sounds over the lower lobe of left lung appeared, showing that dissemination of the disease was hastened by the action of the tuberculin. When he entered the hospital the temperature was 102° F., which was always followed by a decided increase four or five hours after each injection. The dose was gradually decreased from five to one milligramme. The dullness over the affected areas increased and respiration became more difficult. He left the hospital decidedly weaker, and local conditions were more extensive than when the treatment was commenced.

Case 3. Franz Kakuska, laborer, aged thirty-five years, was admitted March 3d, 1891. Dates his sickness back to an attack of pulmonary hemorrhage two years ago. Left apex extensively infiltrated. As he experienced no improvement after the injections he left the hospital at the end of two weeks.

Case 4. Ernest Stahlke, twenty-five years of age, admitted March 11th, 1891. Frequent pulmonary hemorrhages, beginning tuberculosis of larynx. Extensive disease of left lung with

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formation of cavities. Small doses produced decided reaction, both local and general, but the treatment was followed by speedy aggravation of all symptoms, which induced the patient to leave the hospital after a brief trial.

Case 5. M. Fergusson, aged twenty-two years, farmer, came under treatment March 3d, 1891. He claims to have been in good health until three weeks ago. Diffuse infiltration on both sides and over a large surface, with high temperature. The patient insisted on being treated with Koch's lymph, and received one milligramme every second day for a week. The temperature was increased by the injection, and remained continuously high, and the patient left the hospital much weaker than when he entered; at the same time the cough was much more troublesome, and breathing more difficult.

Case 6. Adam Meinhard, aged twenty-four, farmer, was admitted to the hospital February 15th, 1891. His father died of pulmonary tuberculosis a few years ago. Has been suffering from a dry, hacking cough and slight pulmonary hemorrhage since last fall. Beginning infiltration of left apex indicated by slight dullness, fine, dry, crepitant râles, and prolonged expiratory sounds. Small doses of tuberculin during the early part of the treatment produced intense local and general reaction. Sputum contained no bacilli. The dose was gradually increased to twenty milligrammes. At first the patient lost two pounds in weight, but later gained eight pounds. The patient was discharged as cured, and reported himself as being in good health several weeks after he had left the hospital.

Case 7. N. A. Nelson, thirty-two years of age, was admitted to the hospital February 19th, 1891. Has been ailing for a year and a half with symptoms of pulmonary tuberculosis, with occasional attacks of hæmoptysis. Has been hoarse for several months owing to a well-marked laryngeal tuberculosis. Left apex extensively infiltrated. The treatment was continued for four weeks with no improvement of local or general symptoms.

Case 8. George Pemkert, aged thirty-seven years, came to the hospital January 26th, 1891. Apex and base of lung on right side seat of disease; over the base posteriorly the physical signs point to the existence of small cavities. Sputum contained numerous bacilli. Pulse 80, temperature towards evening 103° F.

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Breathing difficult and cough distressing. Injection of one to three milligrammes every other day appeared to improve the general and local conditions, as the temperature became less and the pulse diminished in frequency and increased in force. The dose was gradually increased from three to ten milligrammes, with the result that all the symptoms became aggravated. A pneumothorax developed suddenly in the right pleural cavity, followed by an effusion. Later two pints of a serous fluid were removed by aspiration. After this only small doses of tuberculin were used until March 20th, when the patient was discharged as incurable. He died at his home the latter part of April.

Case 9. Robert Lewis, twenty-eight years of age, farmer, was admitted to the hospital January 1st, 1891. Has been sick for eleven months. During the month of August he had an attack of hæmoptysis. Distinct dullness over right apex anteriorly, and diminished respiratory sounds, while posteriorly over the same area could be heard fine crepitation towards the end of forced inspiration. Beginning infiltration in apex of left lung. During the beginning of the treatment the injections produced typical local and general reactions, but later they were followed by nausea, vomiting, diarrhœa, and loss of appetite; at the same time the local extension increased from day to day and the general condition became so alarming that the patient was advised to leave the hospital.

Case 10. Ben Walter, aged twenty-eight, came to the hospital to be treated by Koch's method, January 22d, 1891. The disease commenced two and a half years ago with pulmonary hemorrhage. Has had a cough ever since. A fistulous opening leads to the lower jaw which is the seat of a tubercular affection. Small cavities in left apex. Treatment was commenced with one-fourth of a milligramme of tuberculin, but the dose was gradually increased to ten milligrammes. The treatment was continued for several weeks, and when the patient left the hospital a decided improvement had taken place.

Case 11. Henry Hayden, aged twenty-six, entered the hospital January 26th, 1891. Has not been well since he had la grippe a year ago. Both apices the seat of symptoms indicative of a catarrhal affection. Hoarseness from the beginning of the disease. No expectoration. The dose of tuberculin gradually increased

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from one to twenty milligrammes. Reaction slight. At times the injection followed by nausea and diarrhœa. Treatment continued for more than two months. At the time the patient left the hospital an examination of the chest showed a decided improvement in the local conditions, dullness having disappeared entirely and crepitation could be heard only over isolated circumscribed points.

Case 12. Albert Studenraus, aged twenty-seven years, druggist, came under observation January 1st, 1891. Five years ago he had an attack of pneumonia on left side from which he never recovered completely. The physical signs point to tuberculosis of left apex and posteriorly on same side dullness and crepitation over base of lung. Had a slight hemorrhage from the lung day after admission. The injection of tuberculin never produced general reaction, although the dose during the ten weeks he was under treatment was increased to eighty milligrammes. His weight increased from one hundred and twenty-six and a half to one hundred and thirty-three and three-fourths pounds. The dullness over base of lung disappeared completely and the physical signs over apex indicated great improvement.

Case 13. Edward Williams, twenty-nine years old, engineer, came under treatment January 15th, 1891. Had an attack of pneumonia ten years ago from which he did not recover for four months. Examination reveals diminished respiratory sounds and slight dullness over right apex; gained three and one-half pounds in weight. Dullness diminished, but bronchial râles over apex remained at time of discharge.

Case 14. Dennis Flynn, forty-four years old, farmer, was placed under Koch's treatment February 24th, 1891. Had a hemorrhage from the lungs five months ago, and has not been well since. Physical signs indicate recent infiltration of right apex. Temperature before treatment always above 101° F. As soon as the injection was increased to five milligrammes the febrile reaction became so intense that the dose had to be diminished to two milligrammes. Repeated attacks of hæmoptysis. The pulmonary affection and general condition of the patient were so much aggravated by the treatment that he was advised to leave the hospital at the end of two weeks, having lost during this time six pounds in weight.

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Case 15. Fred Hadfield, twenty-four years old, suffering from advanced tuberculosis, was brought to the hospital February 2d, 1891. Tuberculosis hereditary in the family. Disease commenced six years ago with a tuberculosis of the ankle-joint which necessitated an amputation. Return of disease in the stump. Since January, 1888, has had five attacks of pulmonary hemorrhage. Almost the entire left lung affected, the lower portion of which was solidified and the seat of multiple cavities. Injections of tuberculin in doses of one milligramme were made at his urgent request every other day. The temperature, which was never less than 101° F., was always increased by the injection. Treatment continued for about three weeks. During this time the local conditions remained about the same, but the subjective symptoms were improved and the patient gained two pounds in weight. At the time he left the hospital, the temperature curves were about the same as before the treatment was commenced.

Case 16. Oscar Kurze, thirty-seven years old, machinist, was admitted to the hospital February 3d, 1891. The pulmonary affection commenced two years ago, but patient was able to follow his occupation until five weeks before he entered the hospital. Hoarseness for one year. Extensive infiltration of lung on right side with small cavities in apex. Laryngoscope reveals tuberculosis of larynx. During the four weeks he was under treatment, he gained six pounds in weight, but the local conditions remained about the same.

Case 17. John Wahlen, thirty-four years of age, shoemaker, was placed under the lymph treatment February 7th, 1891. Had two hemorrhages from the lungs, the first, five, and the second, three years ago. Pulmonary affection located in right apex. Incipient tuberculosis of larynx. Treatment continued several weeks, during which time he lost four pounds in weight; at the same time the local affection and all of the subjective symptoms were greatly aggravated.

Case 18. Albert Sprenger, forty years old, machinist, entered the hospital March 4th, 1891. He dates his pulmonary affection back to an attack of la grippe fourteen months ago. Physical examination reveals tuberculosis in apex of left lung with a focus at base of right lung. Temperature before treatment ranges between 99 and 100° F., and never rose afterwards above 101 F.,

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although the dose of tuberculin was gradually increased to twenty milligrammes. He gained four pounds in weight and the local and general conditions appeared to be improved by the treatment.

Case 19. Eugen Bentzler, twenty-five years old, painter, came under treatment March 7th, 1891. Has not been well since he suffered from an attack of la grippe a year ago.

Infiltration of right apex and base of left lung. Patient gained seven pounds in weight and improved otherwise under treatment.

Case 20. Ferdinand Rossow, aged nineteen, clerk, entered the hospital March 16th, 1891. Disease commenced with an attack of pulmonary hemorrhage November last; since that time he has had a hacking cough.

Dullness and cavernous breathing over left apex; dullness and bronchial râles over base of left lung. Has high evening temperature. The dose of tuberculin never exceeded one milligramme. The patient lost four pounds in weight in the course of two weeks, and during the same time the extension of the pulmonary affection was rapid and the cavities increased in size.

Case 21. Theodor Freese, thirty-four years old, bricklayer, came under treatment March 19th, 1891. Pulmonary affection commenced November last, and two months ago he had an attack of pulmonary hemorrhage. The laryngoscope reveals a commencing tuberculosis of the larynx. Dullness and bronchial breathing over right apex. Pneumothorax on left side. Great dyspnœa; temperature 104° F. As the patient insisted on being treated with Koch's lymph, half-milligramme doses of tuberculin were injected every other day. This treatment had no effect on the temperature. The patient died April 2d, 1891.

Case 22. William Heath, twenty-three years old, traveling agent, came to the hospital to undergo treatment for an affection of the larynx March 23d, 1891. The laryngeal trouble commenced in May, 1890. Laryngoscopic picture presents the characteristic appearances of advanced tuberculosis of nearly all the structures at the entrance into the larynx. Infiltration of both apices. Evening temperature before treatment 103.4° F. One-half milligramme doses of tuberculin were employed, but they had no influence on the temperature, or in arresting the rapid progress of the laryngeal and pulmonary lesions.

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Case 23. John Banner, aged twenty-three, wagon-maker, placed himself under Koch's method of treatment at the hospital March 25th, 1891, for tuberculosis of the larynx and right apex. He received three doses of tuberculin of one milligramme each during the course of one week, and then left the hospital without any signs of improvement.

Case 24. John Giegerich, aged twenty-four, bookkeeper, entered the hospital January 24th, 1891. Disease commenced with hæmoptysis six years ago. Spent one year in Colorado without much benefit.

Large cavity in upper lobe of left lung and beginning infiltration of right apex. The dose of tuberculin increased gradually from one to ten milligrammes. Large doses produced nausea, bloody sputa, but the temperature during reaction never rose above 101° F. Treatment was continued with small doses for over two months with the result that the subjective symptoms improved somewhat, but the local lesions remained unaffected.

Case 25. Mary Brockmayer, aged twenty-three, came to the hospital January 22d, 1891. Disease commenced September, 1890. Large cavity in upper portion of left lung; beginning infiltration of right apex. The evening temperature was high before treatment was commenced, and the patient left the hospital at the end of two weeks decidedly worse in every respect than when she entered.

Case 26. Mrs. Wendland, aged thirty-three, housewife, became an inmate of the Milwaukee Hospital for the purpose of being treated with Koch's lymph for advanced pulmonary tuberculosis. Only small doses were employed to satisfy the patient, who insisted on being treated by this method. The treatment had no effect in arresting the rapid progress of the disease, and the patient died during the second week.

Case 27. Mrs. Krœhnke, aged forty-three, was admitted to the hospital January 24th, 1891. Pulmonary affection commenced two and a half years ago with hæmoptysis. Cavity in right apex. Under the tuberculin treatment the objective and subjective symptoms were greatly aggravated, and the patient left the hospital in a critical condition at the end of three weeks.

Case 28. Ella Berg, aged sixteen, was admitted to the hospital January 29th, 1891. Pulmonary disease had existed for two

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years. Dullness over left apex as far as the fourth rib, cavernous breathing over this space. Over base of lung on same side moist bronchial râles. Injections never exceeded three milligrammes. Rapid emaciation, increase of fever, and aggravation of subjective symptoms necessitated suspension of treatment. The patient left the hospital at the expiration of two weeks and died a few days later.

Case 29. Carrie Mathieson, aged twenty-four, milliner, came to the hospital January 31st, 1891.

Has not been well since she suffered from la grippe a year ago. Since then has had two attacks of pulmonary hemorrhage, the first in July, the second in December, 1890. Extensive infiltration of left upper portion of lung with cavities in apex. Under the tuberculin treatment she failed rapidly. She left the hospital at the end of three weeks, and died at her home a few weeks later.

Case 30. Minna Bartel, twenty-five years old, housewife, sought hospital treatment February 3d, 1891. Duration of disease seven months. Advanced pulmonary tuberculosis with secondary tuberculosis of larynx. Tuberculin treatment was tried faithfully for a number of weeks with decidedly unfavorable results.

Case 31. Augusta Avery, twenty-four years of age, housewife, was admitted to the hospital January 27th, 1891. Disease commenced with a pulmonary hemorrhage July 4th of the preceding year. Copious hæmoptysis four weeks before she entered the hospital. Slight dullness and diminished respiratory sounds over right apex anteriorly. Small doses of tuberculin produced no rise in temperature, but when ten milligrammes were injected the temperature during reaction reached 101.4° F.

About this time patient complained of soreness in the pharynx, and on inspection a number of nodules varying in size from a hazel-nut to that of a walnut could be seen, the mucous membrane covering them in a state of intense inflammation. As no improvement was perceptible in the conditions of the lung, and at the same time both wrist-joints became swollen and painful, the treatment was suspended.

Case 32. Minna Feldt, aged twenty-two, housemaid, was admitted to the hospital January 24th, 1891. Claims that duration of disease does not extend over four weeks. Three weeks

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ago hæmoptysis. Examination reveals incipient tuberculosis of right apex. Tuberculin injections in increasing doses continued for several weeks had no effect in arresting the progress of the disease.

Case 33. Christine Stromberg, aged twenty-six, housewife, entered the hospital January 24th, 1891. She fixes December 8th, 1890, as the day when her pulmonary disease commenced. Incipient tuberculosis of right apex. Tuberculin injections caused but slight reaction. Local condition somewhat improved when she left the hospital four weeks after admission.

Case 34. Maria Niebuhr, twenty years old, milliner, came under treatment February 2d, 1891. Had an attack of whooping-cough a year and a half ago, and has had a cough ever since. Dullness and fine bronchial râles over left apex and coarse bronchial râles over base on same side. Evening temperature high. Local and general condition aggravated by the tuberculin injections.

Case 35. Amanda Sundermann, aged twenty, housemaid, entered the hospital March 12th, 1891. Has been ill since October, 1890. Beginning tuberculosis in upper portion of right lung. Largest dose of tuberculin used eight milligrammes. Some improvement until she came down with an attack of la grippe while in the hospital.

Case 36. Max Seibel, twenty years old, was admitted to the hospital January 26th, 1891. Advanced pulmonary tuberculosis with high evening temperature. The injections of tuberculin increased the temperature curves and hastened the fatal termination.

Case 37. Herman Zuehlke, aged thirty, admitted to hospital January 31st, 1891. Tuberculosis of larynx and infiltration of both apices and base of left lung. The tuberculin injections were followed on three different occasions by hæmoptysis, and on that account treatment was suspended and patient advised to leave the hospital.

Case 38. Joseph List, twenty-three years old, came to the hospital January 31st, 1891, to be treated by injections of Koch's lymph for advanced pulmonary and laryngeal tuberculosis. The suffering and debility were greatly increased by the injections, and the patient was advised to return to his home. He died a few weeks after he left the hospital.

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Case 39. J. Biedermann, thirty years old, entered the hospital February 3d, 1891. Duration of pulmonary disease one year. Part affected, right apex. Tuberculosis of larynx commenced several months ago. Tuberculin treatment proved very dangerous in this case, as the local lesions extended rapidly, and the debility increased after every injection. Patient discharged at the end of two weeks.

Case 40. D. Haget, forty-three years old, presented himself at the hospital for the Koch treatment January 26th, 1891. Cavity in upper portion of right lung with commencing infiltration of left apex. Treatment continued for three weeks when the patient left the hospital in a critical condition at his own request. Death three weeks subsequently.

Case 41. Charles Wagner, aged twenty-eight, brass finisher, entered the hospital February 2d, 1891. Has had a cough for ten years and hæmoptysis in 1887. Limited infiltration of right apex. Tuberculin injections were well borne, and the patient left the hospital after four weeks' treatment, materially improved.

Case 42. Henry Pritchard, thirty years old, came under treatment February 3d, 1891. Extensive infiltration of right apex. The tuberculin injections hastened the local extension of the disease and produced such great prostration that treatment was suspended at the request of the patient. Death a few weeks after he left the hospital.

Case 43. Herman Rehm, nineteen years old, farmer, came to the hospital February 7th, 1891, for the purpose of undergoing treatment by Koch's lymph. Extensive infiltration of left apex; over base of left lung, dullness, fine and coarse bronchial rales. Noticeable improvement had taken place in the general condition of the patient when he left the hospital at the end of six weeks; at the same time the physical symptoms indicated that the local condition had undergone a favorable change.

The injections were made as a rule every other day in order to ascertain the full extent of the local and general reaction following each dose of tuberculin. The first dose never exceeded one milligramme, and in grave cases the treatment was commenced with one-half of this quantity. The dose was never increased, if the temperature during the reaction following it rose above 101° F., and if this result was reached in many cases the

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dose was diminished, or the interval between the injections increased. It is therefore probable that in the grave cases the unfavorable symptoms following the injections were not so much due to the action of the tuberculin as to the intrinsic tendencies of the disease to aggravation. It is, however, an entirely different matter in the mild cases in which in spite of a careful increase of the dose the local and general symptoms underwent a rapid change for the worse, as in such cases the unfavorable results must be attributed to the action of the tuberculin and not to the intrinsic tendencies of the disease. The whole number of cases treated by tuberculin injections at the Milwaukee Hospital during the months of January, February, March and April is forty-three —thirty-two males, and eleven females. For the sake of convenience these can be divided into mild, medium, and grave cases.

Mild cases,	8 males and 4 females	12
Medium cases,	10 males and 2 females	12
Advanced cases,	14 males and 5 females	19
		43

Died in the hospital, one male and one female 2

Aggravation of all the symptoms during treatment:

	14 males and 8 females	22
No improvement,	5 males and 1 female	6
Improved,	10 males and 1 female	11
Apparently cured,	2 males	2
Died,		2
		43

Died soon after leaving the hospital:

	4 males and 2 females,	6

Of the mild cases unfavorably affected by the treatment:

	1 male and 3 females,	4
Of the mild cases improved,	4 males and 1 female	5
Of the mild cases apparently cured,	2 males,	2
		11

The two cases that were apparently cured belonged to the mild type of the disease; no such result was obtained in any of

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the thirty-one cases belonging to the medium or advanced form of the disease. In one of the cases that was apparently cured, the sputum contained no bacilli, and in the other there was no expectoration, consequently some doubt must remain as to the tubercular nature of the pulmonary affection.

In the cases of medium gravity the result of the treatment was as follows:

Aggravated	5
Not improved	2
Improved	5
	12

In the grave cases the treatment was followed by serious results in	12
By no improvement in	3
By temporary improvement in	2
By death	2
	19

General Remarks.

Diagnostic Value of Tuberculin. Great diversity of opinion prevails at the present time as to the diagnostic value of tuberculin. The first reports of the use of this substance were unanimous in attributing to it positive diagnostic value. It was claimed that reaction only occurred in tubercular patients by the specific action of the lymph on tubercular tissue, and that the absence of increase of temperature after injection of the lymph decided the non-tubercular nature of the affection.

Leyden, Quincke, Ebstein, Weber and Biermer maintain that the absence or presence of reaction after the use of tuberculin must not be regarded as absolute proof of the existence or non-existence of tubercular disease in all cases.

Schultze, Finkler, Guttmann, Schreiber, Lichtheim and Rumpf have great faith in the diagnostic value of the use of tuberculin in tuberculosis of the internal organs. The same discrepancy of opinion exists among surgeons as to the value of tuberculin injections in the differential diagnosis of surgical tubercular and non-tubercular lesions.

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Bergmann relies on the reaction following the use of tuberculin in differentiating between tuberculosis on the one hand and syphilis and carcinoma on the other. Bardeleben and Köhler are reserved in their verdict as to the diagnostic value of the method.

Trendelenberg regards the febrile reaction following an injection of tuberculin as an evidence of the tubercular nature of the lesion, except in tuberculosis of the testicle. Esmarch is of the opinion that in doubtful cases the reaction following the use of the remedy is of great diagnostic value. Bramann and Mikulicz place great confidence in the presence or absence of reaction. König and Hildebrand have observed reactions in lesions resembling in appearance tubercular affections, but which by other diagnostic aids were shown not to be of a tubercular nature. Clinical experience has demonstrated that general reaction is produced by tuberculin in cases of actinomycosis and in certain forms of sarcomatous tumors, and that consequently this method of diagnosis cannot be relied upon in differentiating between tubercular lesions and these affections.

A number of the cases reported in this paper furnish conclusive proof that the susceptibility to general reaction varies greatly in different tubercular individuals. In some, intense reaction followed the use of small doses when the tubercular lesion was limited; in others suffering from extensive tuberculosis, large doses produced no rise in temperature. That in the latter class of cases the affection was of a tubercular nature there could be no doubt from the history of the cases, the appearance and location of the lesions, the subsequent behavior of the affection; and in some of the cases the presence of tubercle bacilli in the affected tissues was demonstrated.

I look upon the local reaction in affections of the lymphatic glands as a valuable diagnostic aid in differentiating by the use of Koch's lymph between tubercular and non-tubercular affections of these organs. If the enlargement of the lymphatic glands is due to a tubercular affection, the existing swellings not only become larger, more painful and tender a few hours after the injection of a dose of the lymph, but other glands that could not be felt before the injection become enlarged, and can be felt in the vicinity of those that were recognized before the use of the remedy. But even in such cases I regard inoculation-experiments

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of greater diagnostic value than injections of tuberculin, yielding more positive results without exposing the patient to the risks of local and metastatic dissemination of the disease incident to the latter procedure.

If patients suffering from non-tubercular affections will occasionally, only, respond to the tuberculin test on the one hand, and on the other, in exceptional cases, individuals suffering from well-marked typical tubercular affections have proved themselves refractory to the action of tuberculin, it must appear evident that the use of this substance cannot be relied upon in making a positive differential diagnosis between tubercular and non-tubercular affections. If it can be shown at the same time that a single injection of tuberculin is not devoid of danger, and that implantation of the product of this disease in guinea pigs in the course of three or four weeks will yield results which will enable us to make a reliable diagnosis between tubercular and non-tubercular affections, it is apparent that the use of Koch's lymph as a diagnostic resource should be discarded or at least limited to exceptional cases.

Therapeutic Value of Tuberculin. It is now generally conceded that many cases of tuberculosis reported as cured have since relapsed; some of these have died, and others have been subjected to different treatment. In many instances, of course, the original report has not been supplemented by subsequent communication; as an absolute diagnosis, even by the use of Koch's lymph, is not always possible. It may be some of the alleged cures rest on a faulty diagnosis. This applies with special force to the two cases of pulmonary disease reported as cured in this paper.

Again, it must not be forgotten that tubercular affections not infrequently, under favorable local or general conditions or improved dietetic, hygienic or climatic changes, undergo a spontaneous cure, so that for nearly all methods of treatment so far suggested similiar exceptional results can be claimed. In not a single instance of the eleven cases of surgical tuberculosis that came under my own observation did the treatment result in anything more than a temporary improvement, and in several of them it was followed by local extension of the disease and serious impairment of the general health. The effect of tuberculin

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proved more serious in the treatment of the forty-three cases of pulmonary tuberculosis. There can be but little doubt that in a number of the fatal cases, death was hastened by the treatment, and that in a number of the mild cases it contributed largely towards the rapid local extension of the lesion; while the tuberculin treatment of pulmonary tuberculosis can show no better results, it is difficult to ignore the fact that it has been productive of more harm than almost any other plan of treatment heretofore suggested, and on this score alone the verdict "Away With Koch's Lymph!" is timely and imperative.

Dangers Attending the Use of Tuberculin. Tuberculin when brought in contact with tubercular tissue produces coagulation-necrosis, and during this process a toxic chemical substance is produced, which, when it reaches the general circulation, causes the febrile reaction. The time necessary to reach this stage of its action is usually from three to six hours. The intensity of the reaction depends on the quantity of the toxic substance that is produced and finds its way into the general circulation. The general reaction is a septic condition of the organism produced by the toxic substance resulting from the action of the tuberculin on the tubercular tissue. The temperature and the other general symptoms continue until this toxic substance is eliminated through one or more of the excretory organs. The immediate danger attending the tuberculin treatment consists in the production and introduction into the circulation of a fatal dose of this toxic substance. That the fear of a fatal sepsis resulting from the action of Koch's lymph is not unfounded is shown by a number of such cases that have been reported. If the whole truth were known, this number would be greatly increased by unpublished cases.

The more remote dangers attending the tuberculin treatment have been pointed out by Virchow. The destructive effect of the tuberculin on the granulation tissue breaks down the wall surrounding the infected area and liberates the bacilli and their spores, an occurrence which can hardly fail in giving rise to local and general dissemination. The granulation tissue, the specific primary product of tubercular inflammation, is the wall of defense built up by the tissues to protect the adjacent parts and the organism against invasion. Any method of treatment which

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interferes with this manner of defense clears the way for the enemy and secures victory for the invading army. If future research should lead to the discovery of a specific remedy for the cure of tuberculosis, it will be an antagonistic microbe to the bacillus of tuberculosis or a substance which, when brought in contact with a tubercular focus, will have an opposite effect on the tissues from that of Koch's lymph.

I have given Koch's lymph a fair trial and have carefully observed its effects, and have become firmly convinced both of the danger which attends its use and its utter inutility in curing any form of tuberculosis.

This paper has been written for the special purpose of placing myself on record as one who protests earnestly against further experimentation with this mysterious and dangerous fluid. A careful study of the voluminous literature on the use of Koch's lymph, and my own experience with it, have induced me to head this paper with the title it bears, "Away With Koch's Lymph!"

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DISLOCATION OF THE LENS INTO THE ANTERIOR CHAMBER.

By BOERNE BETTMAN, M.D.

Professor of Ophthalmology in the Chicago Post-Graduate Medical School; Oculist and Aurist to the Cook County Hospital and German Hospital; Attending Surgeon to the Illinois Charitable Eye and Ear Infirmary.

Read before the Chicago Medical Society, May 4th, 1891.

Becker[1] found in collecting the statistics of eye diseases treated for a series of years in some of the principal clinics in Europe and this country, in all about sixty-five thousand patients, that diseases of the lens contribute from five to six per cent. of the total number of cases. Furthermore, the various forms of cataract constitute more than ninety per cent. of these different diseases of the lens, so we can readily see that dislocation of the lens into the anterior chamber is an extremely rare occurrence.

In the interesting statistics referred to above I find that in twenty-one thousand five hundred and eighty-six cases dislocatio lentis occurs but thirty-seven times. In the second table, amongst one hundred and twenty-nine thousand four hundred and fourteen cases of eye disease observed in European and American clinics during a period of from two to ten years, dislocatio lentis was noticed but one hundred and three times. The percentage of dislocatio lentis is consequently less than one-eighth of one per cent. These tables also refer to forty-seven cases included in the category of ectopia lentis and luxatio lentis, and even if these are added to the heading of dislocated lenses, our percentage would not be materially increased.

We must also remember that the terms dislocatio and luxatio lentis include all the various malpositions of the lens, from a slight tilting beyond the equatorial plane to a complete removal from the fossa patellaris either into the vitreous, anterior chamber or through a rent in the sclera under the conjunctiva.

During a hospital and private experience of thirteen years in this city and in the celebrated clinics of Europe, I have met with

[1] Graefe u. Sämisch Handb. d. Gesammte Augenhilkunde V. Band I.

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but two cases of luxatio lentis into the anterior chamber. The first case, to which I will refer later on, I observed while serving as first assistant to Professor Becker in the eye clinic of Heidelberg. It may be classified under the head of spontaneous dislocation, the lens having been opaque and shrunken for a period of years. The second case I saw during my service at the Cook County Hospital, and is practically the only pronounced case of traumatic dislocated lens into the anterior chamber which has come under my observation.

The lens, enclosed in its capsule, is suspended between the aqueous and vitreous humors by the suspensory ligament or zonula Zinni, as it is also termed. This transparent, thin membrane is again attached to the ciliary body, and is made tense or slack according to the relaxation and contraction of the ciliary muscle, constituting what is known as the act of accommodation. If, perchance, the zonula Zinni is partially torn or entirely severed from its attachment, the lens is thrown out of its normal position, and is then sub-luxated, or entirely dislocated.

This partial or complete removal of the lens from its position can be either spontaneous or traumatic.

Traumatic luxation is due either to the concussion of the eye, where the outer coverings remain intact, or it can result from the penetration of a foreign body into the eye; again, it can be secondary, resulting from an ulceration and perforation of the cornea. Consequently Becker distinguishes three forms of this anomaly:

Spontaneous luxation.

Traumatic luxation.

Secondary luxation.

Spontaneous luxations occur in the great majority of cases as the result of overripe senile cataracts.

It must be assumed that the zonula Zinni is either dissolved or becomes detached from the lens owing to the contractile changes instituted by capsular cataract. The modus operandi is explained in the following manner. After a lens has matured its aqueous portion is absorbed and the lenticular body decreases in volume. Its fibres are torn loose from the posterior surface of the anterior capsule, to be followed by proliferation of its epithelia and the formation of capsular cataract. The subsequent changes

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are contraction of the anterior capsule, tension on the zonula and partial or complete tearing of the latter. Any slight shock or jarring of the body, violent exertion, a blow on the head or eye, vomiting, or any other strain, is now sufficient to displace the lens partially or entirely into the chambers of the eye.

Professor Becker[2] bases this theory on the fact that "spontaneous luxated cataractous lenses always exhibit extensive capsular cataract, and, furthermore, that all lenses extracted in their capsules during a cataract operation never show any trace of the zonula on their anterior capsule. This indicates that the connection is severed directly at the capsule and not in the continuity of the zonula."

During the summer of 1880 a shoemaker from the Palatinate was admitted into the eye clinic of the University of Heidelberg. He was perhaps thirty-five years old, and stated that his right eye had been injured during childhood. Soon after the injury his parents noticed the formation of a white object in the pupil. He observed it himself later on in life, and noticed also that its appearance gradually changed. As the years went by the change in color from white to yellow especially impressed him. A week before his admission into the clinic he was disturbed by a feeling of uneasiness and irritability of the right eye. On looking into a mirror he discovered that the yellow body had changed its position from behind the colored part of the eye to a place in front of it.

On examination I found circum corneal injection, the anterior chamber contained a round, shrunken, flattened, yellow capsular cataract. Its lower part concealed the iris from view, above its upper edge a slit of the pupil was visible. On inquiry I elicited the statement that the patient had not received a direct blow on the eye, neither had he fallen nor sustained a shock in any other way. He remembered, however, on further questioning, having struck his right eye a slight blow with his awl a few days prior to the irritable condition.

After the instillation of eserine which induced contraction of the pupil and prevented the lens from escaping into the vitreous chamber, I removed the foreign body through a lower corneal incision. The operation was not accompanied by any unusual

[2] L. C. page 291.

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occurrence, neither was there a prolapsus of the iris or vitreous. Recovery was rapid, the patient being soon discharged with a round black pupil.

The extracted lens was flattened and quite consistent. It presented a homogenous yellowish white color. It was placed in Mueller's fluid and became a part of the valuable collection gathered by my friend and teacher, Professor Otto Becker.

The concussion of the eye produced by the awl was so slight that it had almost escaped the patient's memory. It served, doubtless, to complete the detachment of the lens from the suspensory ligament which had already existed in part. The position of the shoemaker, bending over his work, facilitated the dislodgment of the freed lens into the anterior chamber.

Traumatic dislocation of the lens is due, as I have already indicated, to a concussion of the globe. Offending bodies capable of producing such effects usually impinge upon the lower outer quadrant of the eye, or bony orbit, since the organ of sight is partially protected on its inner and upper sides by the nose and overhanging orbital plate of the frontal bone.

The force of the injury flattens the anterior portion of the eye-ball, diminishes its anterior posterior diameter and increases the equatorial one. The lens, owing to its suspended condition and greater weight, oscillates backwards and forwards, pulls and tears the zonula Zinni, and thus leaves its normal position.

The connection between the lens capsule and vitreous is so firm that in a fresh specimen one cannot be removed from the other.[3]

In the senile state changes ensue affecting the elasticity not only of the zonula Zinni, but of the lens capsule also. Overripe cataracts are frequently removed encapsuled, and are not accompanied by an escape or protrusion of vitreous, showing conclusively that the connection between lens and vitreous can be separated without a break in continuity of the enveloping structure of the vitreous. Not only opaque lenses, but perfectly transparent ones are liable to be dislodged

Frank C., aged sixty years, upon admission into the Cook County Hospital late in October, 1890, stated that he had been struck in the left eye, about four weeks previously, by a stiff, hard boxing glove. The pain was quite severe. The injury was

[3] Merkel L. C. Vol. I., Band I.

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immediately followed by dimness of vision. Severe circum-orbital pain ensued, vision gradually failed until ten days prior to his admission he could no longer distinguish objects. Status Praesens: Left eye; intense ciliary injection. The cornea smooth and clear throughout. The anterior chamber almost completely filled with an opaque, grayish body, circular in outline. Its inner border hidden behind the sclero-corneal margin, but its outer edge free, beyond which the iris is dimly seen. Tension increased. T. 2.—The right eye normal. Patient complains of ocular and radiating pains. October 24th, 1890, placed the patient under the influence of chloroform. The corneal incision was made upwards. No iridectomy was done. I made the peripheric capsulotomy and evacuated the soft, swollen lens mass with greatest ease. Some transparent cortical substance remained behind. I made no further attempt to remove it, owing to the protrusion of a small bead of vitreous. This I snipped off and reduced the prolapsed iris with a spatula. Eserine having been instilled, a pressure bandage was applied and the patient put to bed.

October 26th. A small prolapsus of the iris was visible in the inner border of the wound; the wound had not closed the eye; otherwise looked well; patient was able to count my fingers.

November 4th. The supply of eserine in the hospital had run out. No more being procurable pilocarpine was substituted. The wound gradually healed with a very small prolapsus of the iris incarcerated in the cicatrix. The pupil was drawn upwards, but free and black. Ciliary injection was limited to the uppermost quadrant of the eye. Vision good. Patient was very weak and complained of pain in the epigastrium, accompanied by vomiting; bowels constipated.

November 10th, 7 P. M. The house surgeon was suddenly called to the patient and found him in a state of collapse with no pulse at the wrist. His condition could not be attributed to any cause. Death ensued at 8:45 P. M. Post mortem: Stomach was much thickened. Weight nineteen ounces. Peritoneal cavity contained about one-half ounce of a bloody fluid. Intestines showed minute hemorrhages in their walls. Kidneys were contracted. I learned later on from the nurse that she suspected the patient had poisoned himself.

CENTRAL MUSIC HALL.

[*For Discussion see Society Proceedings.*]

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THE ANATOMICAL RELATIONS OF THE GASSERIAN GANGLION WHICH DETERMINE THE BEST METHOD OF ITS REMOVAL.

By EDMUND ANDREWS, M.D., LL.D.

Prof. of Clinical Surgery in Mercy Hospital, etc., etc.

Read before the Chicago Medical Society, May 13th, 1891.

About eighteen months ago I began to study the question whether the semi-lunar, or Gasserian ganglion could be safely removed from its bed near the center of the floor of the skull. The location of the organ has always seemed to the surgical world so utterly inaccessible that its removal was seldom or never discussed, and even the anatomical descriptions of the parts contained both omissions and errors, so that I was obliged to resort to the skeleton and the cadaver to test the various methods of removing the ganglion which my studies suggested, as well as to correct the omissions and mistakes of standard authors.

While thus engaged upon the matter, it turned out that Professor Rose, of the King's College Hospital, London, was, unknown to me, studying the same problem, and last November he performed the operation upon a living patient, and in January last repeated it upon a second one, thus clearly establishing his priority.

The fifth nerve emerges from the side if the pons verolli and runs forward to the crest of the petrous portion of the temporal bone near its apex. Here, just under the inner border of the tentorium cerebelli, it enters an oval opening in the dura mater and disappears from the sight of one looking down upon the floor of the skull. Anatomists say that it runs beneath the dura mater into the Gasserian ganglion, and that the latter lies in a fossa between the dura mater and the bone. This is not correct. The dura mater splits into two layers, and the ganglion lies between them, enclosed thus in a capsule on the anterior slope of the petrous portion of the temporal bone, having one layer of dura mater beneath it, separating it from the bone and from the internal carotid artery, and another above, separating it from the convolutions of the under side of the middle lobe of the brain. This capsule is of great importance in the operation. The ganglion

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lies very loosely on the floor of its capsule, having a sort of bursa under it, allowing of very easy separation from the floor, and facilitating its removal without wounding the subjacent carotid artery, which there lies just under it and then winds along its inner border.

The ganglion has its upper surface, on the contrary, very firmly adherent to the roof of its capsule, so that even a curette will not scrape it away, and it must be detached by a slow and careful dissection, which sometimes makes minute openings in the dura mater; but as there are no important organs there, except the overlying convolutions, these little risks do no harm.

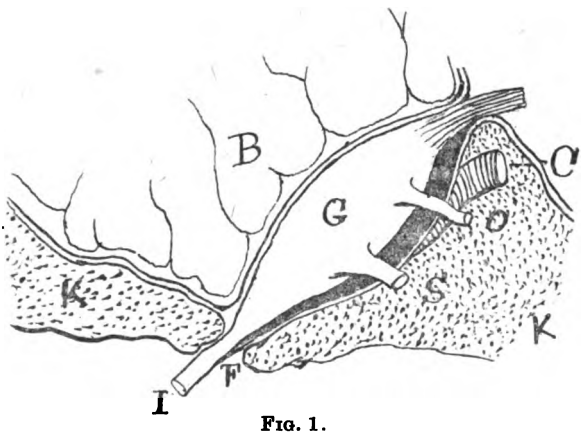

FIG. 1.

Diagram showing the relations of the ganglion.

For illustration it is represented as raised from the floor of the capsule, but firmly adherent to the roof. The dark space under the ganglion is a sort of bursa.

G. The ganglion.

O. The ophthalmic branch.

S. The superior maxillary branch.

C. The carotid artery separated from the ganglion by the bursa and by the floor of the capsule.

B. Convolutions of the middle lobe of the brain resting on the roof of the capsule.

K. K. The floor of the skull.

In his first operation Professor Rose made a complete excision of the superior maxillary bone, in order to get access to the floor of the skull, but in his second he uncovered the parts by a much less destructive plan.

He proceeded as follows, everything being done antiseptically, of course:

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1. Two perpendicular incisions are made, each commencing two inches above the zygomatic arch, one at its anterior and one at its posterior extremity, and passing down to Steno's duct, connect the two by a horizontal incision along the zygoma.

2. Saw off both ends of the zygoma and turn it down, with the masseter muscle attached, on the side of the jaw.

3. Saw off the coronoid process and turn it up upon the temple, with the temporal muscle attached. The loose connective tissue beneath contains the internal maxillary artery, which may have to be tied. Clearing away the loose tissue the external pterygoid muscle appears, and below it two large nerves running down from behind it, the inferior dental and the gustatory.

4. Following these nerves up they join into a large trunk with a strong sheath which comes out of the foramen ovale just where the posterior edge of the external pterygoid plate joins the floor of the skull.

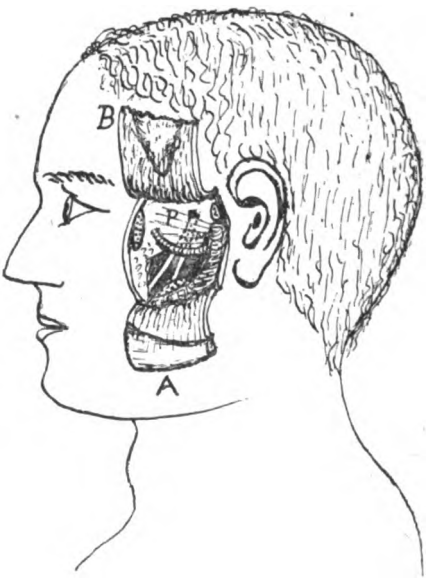

FIG. 2.

A. The masseter muscle and zygoma turned downward.
B. The temporal muscle and coronoid process turned upward.
M. The internal maxillary artery.
P. External pterygoid muscle. The two white lines below it are the inferior dental and gustatory nerves. Their course and junction behind the muscle are intimated by dotted lines. The black spot at P. marks the place of the foramen ovale.

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5. Clearing away the tissues a trephine is applied. This instrument has a long center-pin of about half the ordinary diameter and blunt at the end. The pin is inserted into the foramen ovale and a button of bone removed. It is well to make the shaft of the instrument pretty long.

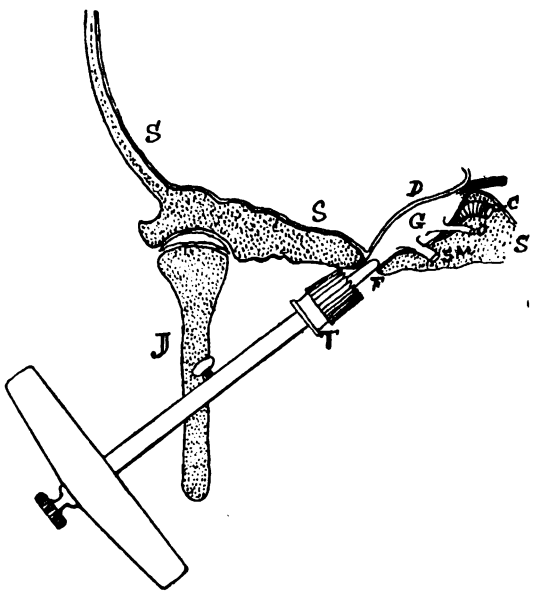

FIG. 3.

The application of the trephine in Rose's operation, looking from before backward.

S. S. S. Portion of the skull.
G. The ganglion.
O. and S. M. The ophthalmic and superior maxillary nerves.
D. The layer of dura mater constituting the roof of the capsule.
C. The carotid artery.
F. The foramen ovale.
J. The ramus of the jaw.
T. The trephine in position with blunte enter-pin in the foramen ovale.

6. The dura mater is now exposed and must be opened, and the ganglion extracted by a hook-shaped, blunt-pointed knife, a blunt hook, etc. The external flaps are replaced and the divided bones wired together.

Professor Rose informs me that this and the previous patient both seem to be cured, but as only a few months have elapsed, it is too early to judge whether a more permanent relief has been ob-

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tained than we usually get from nerve-stretching and nerve-resection. There is good reason to hope for permanent cures from the excision of the ganglion. In mere nerve-resection we probably leave an inflamed ganglion in its capsule, which is in full communication with the brain, but it is presumable that the inflammation in most cases has not extended beyond the capsule, and, if so, then the extirpation of the ganglion removes the whole disease. However, time and future experience alone can determine this question. Nerve-resection generally cures for one or two years only, though a few are permanently relieved.

My studies on the cadaver lead me to prefer a different operation from that of Professor Rose. My plan is this:

1. I make the external incisions according to his plan.

FIG 4.

Showing a portion of the base of the skull and the level triangle. The black circle, T, shows the space for trephining in the author's operation.

O. Foramen ovale.
S. Foramen spinosum for middle meningeal artery.
T. Place for trephining.
P. Pterygoid ridge.
Z. Zygomatic arch.

2. Tie the internal maxillary artery, cut the external pterygoid muscle near the condyle, and draw or snip it away. The ptery-

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goid ridge of the temporal bone is now exposed. Between the ridge and the foramen ovale there is a triangular level space some two and a half centimeters in diameter which contains no important organ. Clear away the tissues from it.

Set a two-centermeter trephine in the level triangle with its inner edge within about three millimeters of the outer border of the foramen ovale, and remove the button. If the middle meningeal artery bleeds, tie it, or else tie or compress it where it enters the skull through the foramen spinosum a few millimeters outward and backward of the posterior end of the foramen ovale, or if preferred you can plug the foramen spinosum.

3. With narrow gauge forceps bite away the isthmus of bone between the trephine hole and the foramen ovale. Then pull the nerve firmly outward, and bite away the other edges of the foramen. You now have an ovate field of dura mater exposed with the strong inferior maxillary nerve depending from it. Draw the nerve outward, and open the dura-mater just beyond it by an incision half encircling the origin of the nerve. This will open the bursa beneath the ganglion, allowing you to look into a dark cavity shown as a black crescent in Fig. 5; enlarge the incision sufficiently and with blunt hook and Rose's hooked knife cut the superior maxillary, and the ophthalmic divisions close to the ganglion.

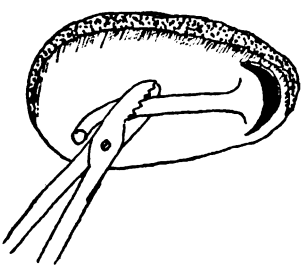

FIG. 5.

Diagram showing the dark cavity beneath and inward from the ganglion when the capsule is incised and the nerve drawn outward.

4. Open the end of the capsule pretty freely and with forceps draw the nerve inward, and patiently dissect the ganglion from its firm adhesions to the roof of the capsule.

5. As this dissection is a little tedious, I think no harm would be done if the roof of the capsule were snipped away with curved

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scissors, bringing the ganglion with it, and allowing the convolutions to settle down upon the floor of the capsule, but it has not been tried upon the living patient.

There are four or five other ways in which the operation can be done, but this plan seems to me the best, and superior to that of Professor Rose.

In making these studies I am indebted to Professors Wyllys and Frank Andrews for important assistance.

6 SIXTEENTH STREET, CHICAGO.

[*For Discussion see Society Proceedings.*]

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A CASE OF HELFERICH'S OPERATION FOR GANGRENOUS STRANGULATED HERNIA.

By F. H. JENKS, M.D.
President Aurora Medical Society.

Read before the Chicago Medical Society, May 4th, 1891.

In the light of the results heretofore attained in the treatment of strangulated hernia where the knuckle has become gangrenous it would seem that surgeons ought to be ready to eagerly adopt any method that will lessen its mortality. Up to the present time there have been two methods of handling such cases, each method being variously modified to meet special conditions. The first and probably most frequently employed method is to make an artificial anus to be left open or be closed by a future enterectomy. The other is to perform enterectomy, removing the gangrenous portion at the time of making the herniotomy.

In the method where an artificial anus is left the immediate results are comparatively good, but the patients usually die in the course of a few months from progressive marasmus. In 351 cases of artificial anus from various causes collected by Dr. W. R. Batts[1] of Philadelphia, there were 133 deaths, making a mortality of 37.9 per cent. The remainder of the cases lived a longer or shorter time in varying degrees of health.

In the cases where enterectomy is performed, either at the time of the herniotomy or later to close an artificial anus, the results are also unsatisfactory. About fifty per cent. die. The latest collection of cases of gangrenous strangulated hernia I have seen are those reported recently by Mr. C. B. Lockwood[2] to the London Medical and Chirurgical Society from the Bartholomew's Hospital records. There were 35 of these cases with 31 deaths.

The study of statistics is an unsatisfactory method of determining the value of an operation unless they cover a very large

[1] John Ashhurst, Jr., M.D., in International System of Surgery. Vol. vi. p. 86.

[2] London Correspondent to New York Med. Record. April 11, 1891.

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number of cases, and, while we cannot attach much importance to the various collections of these hernias, we all know that a high rate of mortality attends the methods of treating them. Whether Professor Helferich's method or modifications of it can improve the results remains to be seen.

As described, the operation is applicable to those cases where the viability of the constricted knuckle is in doubt. Briefly, it is as follows:—When it is found that the knuckle of intestine is in danger of breaking down, forbidding its return to the abdominal cavity, the constricting ring is nicked as in ordinary herniotomy and the gut is gently pulled out through the opening until there are about twelve or fifteen c.m. of both proximal and distal healthy gut exposed. Now a small rubber package band should be placed around the loop as high as practicable in order to close the lumen of the gut to prevent its contents from interfering with the operation. At a point about a hand's breadth above the constriction or high enough to be sure of healthy intestine an opening is made three or four c.m. long in both the proximal and distal portions of the gut and their edges approximated one to the other with sutures forming an anastomosis. The openings should be lengthwise of the gut and on the side opposite the mesenterial attachment, as at this point hemorrhage is least and most easily controlled. Before the sutures are made the loop of gut should be emptied and thoroughly washed out, care being taken that none of its contents enter the abdominal cavity.

The loop, after being thoroughly washed, should now be replaced carefully until the anastomosis is, without doubt, within the abdominal cavity, leaving its constricted neck and the congested knuckle in the wound. This should be packed with iodoform gauze and dressed antiseptically.

If the knuckle regenerates it may be returned to the abdominal cavity after a day or two and the abdominal wound closed. If the knuckle dies it may be removed, the open ends of intestine invaginated and closed with sutures, and left to be granulated over in the wound. This should not be done until the patient has gained considerable strength and when it is certain that the anastomosis is pervious. Professor Helferich makes the second operation without an anæsthetic.

The case I have to report was that of a married lady fifty-five

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years old; had a right inguinal hernia about the size of a hen's egg for about twenty years, never reduced, no truss worn. On the 20th of January, this year, during a fit of coughing the hernia became suddenly painful. Six hours afterwards, at eleven o'clock p.m., when I first saw her, I found her suffering from abdominal pains radiating about the umbilicus, moderate tympanitis, the hernial tumor the size of a goose-egg, tense, dull on percussion and irreducible. She had vomited once and had one passage of the bowels since the beginning of her abdominal pains. Material vomited was what she had taken. Administered morphia sulphate gr. ¼ hypodermatically and applied cold to the hernial tumor with the hope of being able to reduce the hernia. Seven hours later, at six the next morning, the patient had vomited once and had another passage of the bowels. She had suffered but little pain since last seen but had slept none. Otherwise her condition was the same. At eleven o'clock my friend, Dr. H. Milbacher, met me in consultation to consider the advisability of performing herniotomy. From the small amount of disturbance and with the hope of reducing the hernia at a later time it was decided to postpone herniotomy until the next morning unless more urgent symptoms should appear. During the remainder of the day and until three o'clock the next morning her condition remained unchanged. She had been given morphia sulphate gr. ¼ by the mouth at two different times to control a small amount of pain. At this time, however, pain increased, she vomited two or three times and abdomen became more tympanitic. Pain was controlled by morphia sulphate gr. ¼ hypodermatically. At nine o'clock, forty hours after her first symptoms, with the concurrence of Drs. Milbacher and H. Reder, it was decided to operate. She had vomited in all but five or six times and at no time was it stercoraceous. But because the hernia was still irreducible and on account of constipation during the last thirty hours, abdominal pain, tympanitis, and the tense and enlarged condition of the hernial tumor, it was thought operative interference was demanded.

With the assistance of Drs. Milbacher and Reder I proceeded with the operation of herniotomy after having shaved the pubes and making the parts antiseptically clean. The sac contained about 45 or 50 c.c. of clear odorless serum. The knuckle was

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about the size of a walnut, but was of very dark color, and, while not gangrenous, it presented such an appearance that it was deemed unsafe to return it to the abdominal cavity.

Dr. Milbacher had previously called my attention to Professor Helferich's paper read before Deutsche Gesellschaft für Chirurgie as reported in the *Centralblat für Chirurgie*,[3] and it was determined to apply the operation in the present case. Accordingly, after nicking the constricting ring, the loop of intestine was pulled out until about 12 c.m. of healthy intestine was in view. An anastomosis was made between the proximal and distal portions of the gut by making an incision in each about 4 c.m. long and uniting the edges of one incision with those of the other by a double row of sutures, one continuous and the other the Lembert suture. The continuous suture included the mucus layer as well as the peritoneal. The gut was thoroughly irrigated with a three per cent. carbolic acid solution, afterwards with sterlized water. Then the gut was carefully returned to the abdominal cavity as far as the constriction, leaving the knuckle in the wound. A piece of iodoform gauze was passed through the mesentery under the loop to prevent the knuckle from accidentally passing into the abdominal cavity. Iodoform gauze was packed around the knuckle and over it, and over this, sublimate gauze and absorbent cotton. Over all was placed a spica bandage. Time of operation two hours.

The patient rallied well from the operation, thanks to the careful anæsthesia. The temperature reached 101° the evening after the operation, and therafter ranged from 100 to normal. On the fourth day and every day after she passed flatus but never fæces *per rectum*. On the fifth day fæces began to pass through a small opening in the knuckle which had now begun to break down. The evening following the operation she was given milk and eggnog in small quantities, which were gradually increased until by the fourth or fifth day she was taking four glasses of milk and from two to four eggs in the twenty-four hours. During the whole time, her pulse, while of good quality, ranged high, being from 100 to 150. On the seventh day it was 150 in the morning while the temperature was 99.4°F. It became gradually faster and faster and weaker until about nine

[3] Beilage zum Centralblat für Chirurgie 1890, No. 25.

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o'clock, when she died, her body being very much emaciated. After the operation she suffered no pain, and all other symptoms of strangulation except constipation disappeared.

The immediate cause of death can be only conjectured, as, unfortunately, no autopsy was allowed, and it is hardly worth while to even discuss the possibilities in the case. We do not even know whether the anastomosis was pervious. She passed flatus, but that might have generated below the anastomosis.

Thus far there have been four other cases of this operation reported. Two by Professor Helferich[4], one by Dr. Kredel[5] and one by Dr. Saltzwedel[6]. Of the five cases there have been two recoveries, and, although it is not such a very good showing, I believe that the operation, slightly modified, will have a future. It would seem that if instead of sutures in the anastomosis Professor Senn's bone plates or Dr. Abbe's catgut rings[7] be used we shall be able to save a large number of such cases. Thus modified I think the operation may be applied not only to cases where the viability of the gut is in doubt but where it is actually broken down and an enterectomy or the formation of an artificial anus is demanded. The bone plates or catgut rings may be applied in so little time that by their use one great cause of failure is eliminated. For the most dextrous to perform circular enterectomy requires from one and a half to two hours, and unless the patient's condition is *par excellence* and the greatest care used in administering the anæsthetic he is in danger of dying from shock before all the sutures are taken.

To a less degree may the same objection be made to the operation just described. There are a large number of sutures to be carefully made, and if only some means can be applied whereby an anastomosis may be quickly and perfectly done we shall have a method that will probably afford many recoveries.

AURORA, ILL.

[*For Discussion see Society Proceedings.*]

[4] Langenbeck's Archiv. Bd. xli. Heft 2.

[5] Centralblat für Chirurgie, 1890. No. 31. p. 591.

[6] Berlin klin. Wochenschrift, 1890. No. 24. p. 548.

[7] New York Medical Journal, March 23, 1889.

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REMOVAL OF THE CAPSULE OF THE LENS.

By C. M. HANSEN, M.D.
Assistant Surgeon Illinois Eye and Ear Infirmary, Chicago.

Read before the Chicago Medical Society, May 4th, 1891.

I had expected to present a patient before the Society, together with the history of his case, but a complication has arisen, as I will explain later, that prevents his presence here to-night.

The patient, Michael F., a Swedish laborer, aged thirty-six, got a traumatic cataract in his left eye three years ago. He can not explain exactly how the accident happened. He seems to have received a violent blow on the eye by some machinery, and the cataract developed gradually afterward. January 18th, this year, he got his right eye hurt by a stroke with a hammer that ruptured the cornea across and caused a fresh traumatic cataract in this hitherto good eye. He came the same day to the Illinois Eye and Ear Infirmary, where I received him and advised him to be taken in as a house-patient. By some misunderstanding, however, he went away to his home in the city, and I did not see him again till some day in March, when I was called in consultation by Dr. Windrow to see the same man. The condition of his eyes was then as follows: In the right eye, recently hurt, was a soft traumatic cataract with fair perception of light. The eye was free from any irritation, but the iris was adherent to a heavy scar that ran across the middle of the cornea. In the left eye the tension was normal, the cornea clear, the iris slightly tremulous, and the lens transformed into a shrunken, calcareous cataract. Perception of light and projection fair. The iris dilated well by atropine.

Taking into consideration the irregular astigmatism caused by the scar in the right cornea, which would prevent any fair degree of sight in that eye, if operated, and with the idea of attacking first that eye which gave the least chance, I proposed to operate on his left eye. I commenced by doing an iridectomy downward on March 7th. A week after the iridectomy I made a

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broad discision, thereby opening a hole in the capsule, through which he could count fingers for a few days, then it closed up again.

During the discision I observed that the connection of the capsule with the zonula was not strong, and expecting it to be possible to break all connection without too much risk, I told the patient that I would try a last chance. Then I reopened the old iridectomy wound, grasped the anterior capsule of the lens with a straight iris forceps, and by light tractions succeeded in breaking loose all adhesions and delivering the entire capsule out through the small wound The incision being made with a narrow iridectomy-knife, it closed immediately behind the shrunken capsule, so that only an insignificant amount of vitreous was lost. The capsule was very thick, with a small amount of calcareous contents; it contained no foreign body. No closer examination was made, as it disappeared through carelessness of an attendant.

The eye was filled with blood for about a week after the operation, but cleared up nicely, and after three weeks, April 10th, he could read with +12.00 the big E in ten feet distance ($V=\frac{10}{200}$). He could tell the time by his pocket-watch, and was able to do some work in a repair-shop, thereby making a living.

Then, the other day, I visited him to ask him to come here to-night. I found him lying in his bed, staring, but not noticing anything, giving no answer to questions nor showing any recognition—in short presenting a picture of the most abject stupidity. His wife explained that he had been lying in this state for about two weeks, having had previously an attack of acute mania that had resulted into extreme melancholia. The man had always been a heavy drinker, and this, together with his misfortunes, had been too much for him to bear.

The condition of his eye was excellent, the pupil black and the ophthalmoscopic view clear. But no examination of his vision could be made on account of his mental state.

Now, gentlemen, you may ask me why I report this case, and if I mean to advise such treatment of Morgagnian cataracts generally. Most certainly I do not, in any case where the patient has another eye in reserve; and even in my own case the desperate condition of the man only could justify my proceedings. But I

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wish to show how unexpectedly well the operation succeeded, and to accentuate that it is not more dangerous than the partial excision of the capsule, and certainly it has a surer effect in cases where a simple discision does not give a satisfactory result. In this operation no larger incision is needed than in the capsulotomy, just large enough to allow a straight forceps to enter, catch the capsule and to deliver it out as in an accouchement. As the capsule, under these circumstances, will always be slack and empty, its contents being more or less absorbed previously, there is no comparison, as to the risk of losing vitreous, between this proceeding and the extraction of a senile cataract in its capsule, even if the vitreous is considerably liquefied in the old traumatic cases.

And last, not least, this case is again the old story of labor lost—the story of the surgeon who thinks he has for once done a good deed that may cover the multitude of his sins, and the grim humor of fate that lets a precarious operation succeed, and then, when the eye is restored into some degree of usefulness, destroys the man's mind and leaves the regained eye-sight useless for him.

495 West North Avenue.

[*For Discussion see Society Proceedings.*]

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A DEGENERACY OF MAXILLARY DEVELOPMENT IN THE CRIMINAL CLASS, WITH A SERIES OF ILLUSTRATIONS OF CRIMINAL JAWS.

By EUGENE S. TALBOT, M.D., D.D.S.

Prof. of Dental Surgery in Woman's Medical College; Lecturer of Dental Pathology and Surgery in Rush Medical College.

Presented in outline before the Chicago Medical Society, April 20th, 1891.

Read before the Neurological Section of the American Medical Association. Washington, D. C., May 6th, 1891.

Very little has been written upon the subject of aberrant development and asymmetry of the skeleton. In looking up this subject a few years ago in the medical library at Washington, only twenty-four cases could be found in foreign and American literature. The only work treating upon this subject has lately been issued by Dr. Sutton, of England, and is only elementary in character. It is a singular fact that in the study of the defective classes, the attention of scientists has been almost wholly confined to the study of the brain. The most interesting portion of the subject—asymmetry of development of the osseous framework—has been almost entirely neglected. The study of the development of the bony structure through the medium of the defective classes opens up a field for investigation which is decidedly interesting. That the brain is defective in the flotsam and jetsam humanity has come to be generally accepted. The question now is, "Does a defective brain influence the development of the tissues of the body, or is it coincidental with defective development in general, and if so, to what extent?" We must assume that if the tissues in one part of the body are affected by faulty nervous structure, the tissues in other parts may also be affected. We must also assume that if the tissues on one side of the body are arrested in their development, as a consequence of trophic derangement, the tissues of the opposite side may also be arrested or excessively developed from the same cause. It is more difficult to observe this asymmetry of development of the body in general because of the distance of the parts from each other, than

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to observe the inequalities of the cranium and maxillæ. Here we have the lateral halves in such close proximity that even a casual glance by an accustomed eye will recognize the smallest deviation in the bones of the head, face and jaws. We would naturally, therefore, select the cranium and maxillæ for an accurate examination.

In the degenerate classes in general there is a certain degree of similarity of aberrations of type of cranial developments. In idiots and the insane, as well as in the habitual criminals, we observe the microcephalic as well as macrocephalic crania. In such cases, the jaws may become well developed or arrested, according to the degree of the development of the skull, although sometimes independent of it. Asymmetry is very marked in these individuals, especially in the hereditary and habitual criminal.

Although prepared to find a goodly proportion of atypical conformations of the jaws and teeth among criminals, my observations gave results which were a little surprising. There were four hundred and seventy-seven subjects, of whom four hundred and sixty-eight were males and nine were females. Of the whole number, three were Chinese, eighteen were negroes, and the remainder were whites, the latter representing many nationalities.

In the majority of the cases the jaws of the negroes were well developed. One had a partial V-shaped arch, one a saddle, one a V, and in one the left body of the lower jaw was found to be much smaller than the right. The bones of the head and face were also well-developed. The three Chinese were all sub-microcephalic, with very small jaws, and two of the three had saddle-shaped arches. It is worthy of note that the nine females examined had large and well-developed jaws with normal arches. In no part of the osseous system is arrested and excessive development so conspicuous as in the superior and inferior maxillæ. In this region, therefore, we would naturally expect to meet with the aberrations of degeneracy. The reason for this lies in the fact that while the inferior maxilla is developed independently of the other bones of the skeleton, and attains to its normal size by exercise, the superior maxilla, being a fixed bone, is dependent upon the various influences which govern the ossification of the bones at the base of the skull.

Some of these causes are inflammation of the membrane in

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utero, hereditary taints, eruptive fevers and other constitutional diseases.

It is a singular fact that most of the deformities of the jaws and teeth are confined to the superior maxilla. When deformities of the inferior maxilla occur they consist in either excessive or

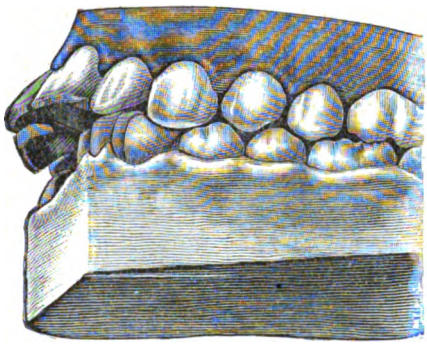

FIG. 1.

arrested development of the bone, while irregularities of the lower teeth are always due to local causes, such as the influence exerted by the irregular teeth on the upper jaw when coming in contact with them in the act of mastication. The deformities of the jaws are more noticeable to the casual observer than deformities of other osseous structures, because they are in closer

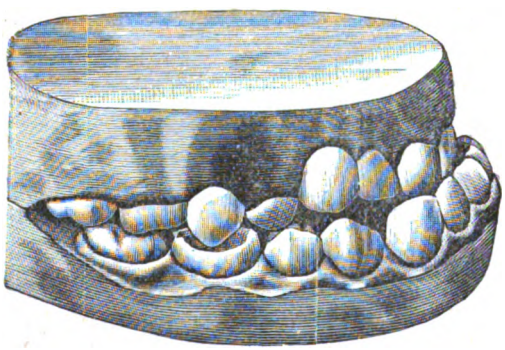

FIG. 2.

proximity to each other than the lateral halves of the body, and because any deviation from the normal occlusion of the teeth can be detected at a glance. The deformities of the jaw proper which we have observed in the criminal classes are fixed and

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definite in character and few in number, while those of the alveolar processes and teeth are numerous and variable.

The deformities of the jaw proper consist of excessive or arrested development of one jaw, while the other may be normal, or one may be over-developed and the other is stunted. Some-

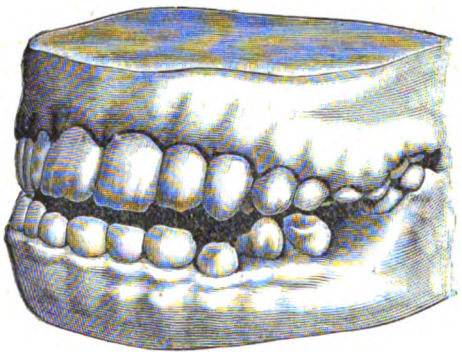

FIG. 3.

times the right side of one jaw will be normal while the left side will be either excessive or arrested in development. In other cases the two sides will present different forms of development. Again, one may frequently observe a lower jaw with a normal body while the rami are arrested or excessively developed, or the reverse may be found, *i. e.*, normal rami, with an arrested or excessive development of the body.

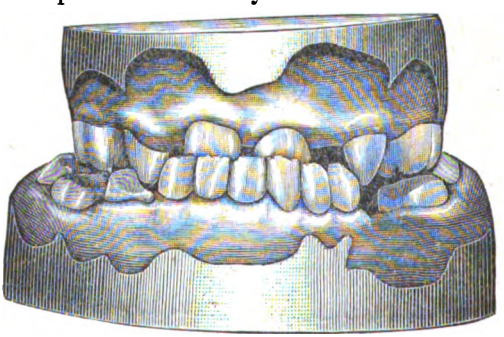

FIG. 4.

Figure 1 illustrates the condition of excessive development of the upper jaw. The jaw, alveolar process and teeth protrude to such an extent that when the jaws are closed the individual is unable to close the lips.

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Figure 2 illustrates excessive development of the body of the lower jaw. This deformity is called an "overbite." The lower teeth protrude and shut outside the upper, which is the reverse of normal occlusion.

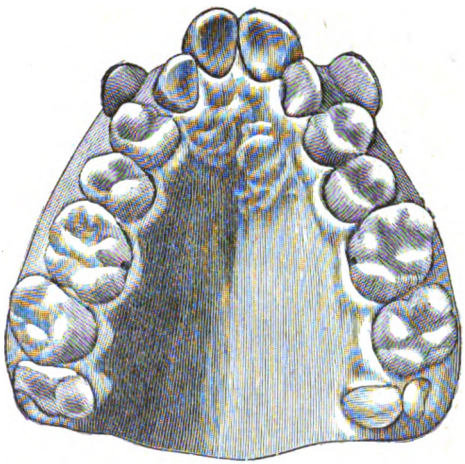

FIG. 5.

Figure 3 illustrates arrest of development of the rami of the jaw. The borders of the alveolar processes which contain the teeth are not parallel, and, as a result, when the molars make

FIG. 6.

their appearance at the twelfth year, the anterior part of the jaw is forced open.

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Figure 4 illustrates arrested development of the superior maxilla. There is no protrusion of the anterior superior alveolar process and teeth, owing to the absence of the germs of the lateral incisors and bicuspids; hence these teeth are wanting.

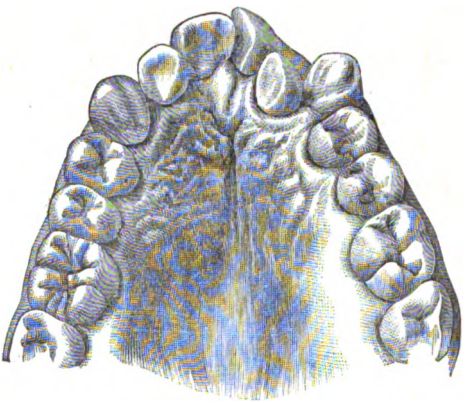

FIG. 7.

The result is that all the superior teeth that are in place shut inside the lower teeth. When arrest of development of the superior maxilla takes place and all the teeth are present, two

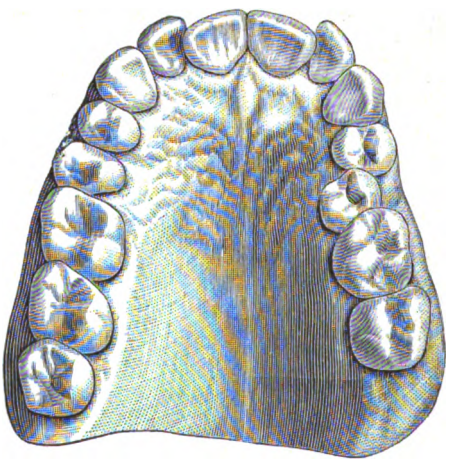

FIG. 8.

forms of deformity of the jaws and teeth are always observed—the V-shaped arch, Figure 5, and the saddle-shaped arch, Figure 6. The V-shaped arch is always contracted anterior to the cuspid

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teeth, while in the saddle-shaped arch, the arch is contracted posterior to them. These peculiar deformities commence to form at about the eighth year, i.e., these deformities are produced while the permanent teeth are erupting. The reason for these formations is that the long diameter of the jaw is not large enough to contain the long diameter of the teeth. The peculiar variety formed depends upon the time and order of the eruption. It frequently happens that the teeth upon one side will erupt in their natural manner, and at the proper time, in which case the jaw and teeth upon that side will be normal. The other side, owing to premature extraction on the one hand, or on the other, to delay in removing the temporary teeth, will form either a semi V-shaped arch, Figure 7, or a semi saddle-shaped arch, Figure 8.

The foregoing illustrations represent the types of aberrant development of the jaws and teeth, as met with in the degenerate classes, and can be readily verified by even a superficial examination of the criminal classes. As far as their accuracy as illustrative type is concerned, they are fairly representative of the various types of deformities as outlined from a careful study of nearly four thousand irregularities of the teeth.

125 State Street.

[*For Discussion see page 261.*]

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REPORT OF CASES WITH AUTOPSIES.

(1) Pulmonary Tuberculosis, (2) Carcinoma of Œsophagus, (3) Perforating Appendicitis, (4) Abscess of Liver, (5) Intraperitoneal Rupture of Bladder.

By JAMES B. HERRICK, A.B., M.D.,

Adjunct Professor of Theory and Practice of Medicine, Rush Medical College; Professor of Materia Medica and Therapeutics, Woman's Medical College, Chicago; Attending Physician Cook County Hospital, etc.

Read before the Chicago Medical Society, May 18th, 1891.

All of these cases save the second occurred in the practice of Dr. C. W. Earle, with whom I was associated from November, 1889, to November, 1890. As his associate and assistant I saw them all and made the autopsies.

Case 1. This was a case of ordinary chronic pulmonary tuberculosis, the fibroid phthisis, interstitial pneumonia, of the text-books, in a man forty-six years of age, where the usual physical signs of consolidation of one lung with small apical cavities, involvement of the apex of the second lung, were present, and where also the history of the case led to a diagnosis of tubercular intestinal ulcers. The autopsy confirmed the ante-mortem diagnosis.

I report the case not for anything remarkable in the post-mortem findings, but to call attention to, and draw a lesson from, one fact in the clinical history. A sufferer for more than three years preceding his death, the patient had in that time consulted, and been treated by, no less than four physicians, for stomach and intestinal trouble. Loss of appetite, nausea, occasional vomiting, persistent diarrhœa, pain in epigastrium and chest, cough, emaciation, were his complaints. Not one physician examined his lungs. The cough, they said, was a stomach cough, the emaciation due to poor appetite, exhausting diarrhœa, etc. Not until he consulted Drs. H. A. and Frank Johnson was he told the true nature of his trouble, though a careful review of the history of his case warrants the conclusion that, during three or four years there existed pulmonary, and during a great part of

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this time intestinal, tuberculosis. This case merely emphasizes the fact pointed out by all authors, that gastric and intestinal disturbances are common in pulmonary phthisis, and that they may be so prominent as to mislead both patient and physician, unless careful inquiry into the history be accompanied by rigid physical examination.

Case 2. J. R., male, aged about fifty, first came under my observation during my service as house-physician in the Cook County Hospital, in July, 1889. The history of gastric disturbance for two years, with some difficulty in swallowing, together with the extreme emaciation, the vomiting of blood, had led to a diagnosis of malignant growth at the cardiac end of the stomach. After rectal feeding for about a week, and then stomach feeding with the lightest foods, the patient began to improve, and in nine weeks walked out of the ward a happy man, able to swallow both liquids and solids, daily gaining in weight and strength, and fully persuaded in his own mind of his complete recovery, and almost convincing us that our case was one of ulcer or chronic gastritis, instead of carcinoma. He ran his locomotive for a few weeks and was then obliged to give up work once more. After trying various physicians and submitting to gastrotomy in St. Louis by Dr. Bauer, he fell into my hands in July, 1890, with all the symptoms of œsophageal obstruction, the tip of the bougie passing but fourteen inches from the incisor teeth.

He refused further operative interference and died from starvation in August, 1890.

The autopsy showed, in addition to the usual changes incident to starvation, a carcinoma[1] covering, as a soft, raised mass, the lowest two inches of the œsophagus and the stomach for an inch in every direction about the cardiac opening. Two egg-sized, excrescent-like, spongy masses protruded from the softened base, the one into the œsophagus, the other into the stomach. Such a softened mass had been removed by Dr. Bauer from the cardiac end of the stomach. Why the opening in the stomach was closed, when the nature of the difficulty was discovered, and no gastric fistula made, I do not know. Some of the stitches are still seen *in situ* in the specimen.

Interesting and instructive in the history is the amelioration

[1] Microscopic Examination made by Dr. L. Hektoen.

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of symptoms following prolonged rest of the stomach. This did away with the constant gastric irritation from the ingestion of food. And some portion of the new growth must have sloughed and escaped notice in the vomitus or fæces, thus removing temporarily the stenosis. The duration of the disease was three years, a longer period than usual.[2] No secondary deposits were discovered. The primary carcinoma would seem to have been in the œsophagus and by direct extension to have involved the stomach.

Case 3. Mrs. H——, aged forty-five, while riding on a street car and while in apparently good health, was seized of a sudden pain in the right side of the abdomen, severe enough to induce her to give up her morning's shopping, return home, seek her bed, and invite medical attendance. Two days later she was seen by Dr. Earle and one day later by myself. The classical symptoms of peritonitis were present—tympanites, pain and tenderness over entire abdomen, flexed knees, wiry pulse, temperature 100°+ F., etc. The consulting surgeon advised strongly against operation. Death on seventh day after she was seen by Dr. Earle.

Autopsy ten hours post-mortem. Abdomen only, examined. Gas in cavity, fœtid odor, about one quart purulent fluid, fibrinous flakes on reddened parietal and visceral peritoneum. Adhesions especially marked in right iliac region, none very firm. No old abscess cavity discoverable. Appendix free. Through and through opening in appendix, as shown in specimen, two millimetres in diameter and one and one-half centimetres from tip of appendix. Small fecal stone in appendix.

Remarks: There was no history of preceding attack unless what was called the influenza, a few months before, were one. Perforation came on unheralded by any premonitory symptoms and the local peritonitis became rapidly a diffuse and fatally septic form of the disease. Mynter[3] following With of Copenhagen, makes three forms of peritonitis due to primary appendicular trouble. (1) *Adhesive*, where ulceration in appendix goes so far that peritoneal covering is affected and adhesions are formed. (2) *Local*, characterized by local peritonitis and primary abscess. (3)

[2] "The entire duration of the disease seldom exceeds a year or a year and a half."—Strümpell, Text-Book of Medicine.

[3] Mynter. On the Pathology of Appendicitis. Annals of Surgery, Vol. xiii. No. 4.

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Diffuse, by perforation directly into peritoneal cavity. Adopting such a classification, this case falls under the last head. Krafft[4] in his oft-quoted article says:—"The perforation is usually located near the free end [of appendix], but when, for example, it is located in the middle, it may be circular and thus, as it were, amputate the appendix." Examination of the specimen will show that the appendix in this case is nearly amputated by a through and through perforation. I have left intact within the appendix, the hard substance, probably the fecal stone or concretion found in so many cases, "either in the abscess cavity, or in the perforation opening in the appendix, or still completely in the canal of the appendix."

The fact that the pain started in the right iliac region where, before tympany became marked, there had been the greatest tenderness, the fact that liver dullness had disappeared, taken with the profoundly depressed condition of the patient, the pinched features, weak pulse, sweatings, etc., pointed suspiciously to the appendix as the source of the peritonitis, apparently septic in character.

This case furnishes additional support to the later view that cases of "idiopathic peritonitis" are extremely rare. Adequate causes can be found if carefully sought for before or after death. Catching cold, congestion of the liver, even though the patient has not fully recovered from the influenza and is passing through the change of life, will not explain (though this was an explanation offered in this instance) such a case of septic peritonitis as this. The more autopsies that are made in such cases the fewer the cases of idiopathic peritonitis.

Case 4. September 14th, 1890, Mr. W—— came to consult Dr. Earle, who, though not his regular physician, had seen him once or twice before. In the absence of Dr. Earle I examined the patient, and from the history recorded at that time I copy the following facts:

He was thirty-nine years of age, married, druggist by occupation, and had been in good health previous to the summer of 1889, when he was ill for eight or nine weeks with some form of continuous fever, which he thought the doctors regarded as a typho-malarial fever. While diarrhœa was not a prominent feature

[4] Krafft. Volkmann's Sammlung klin. Vorträge. No. 331, Jan. 1889.

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of his case he passed blood in the stools on at least two or three occasions. He recovered sufficiently to resume light work, though he did not feel up to his usual standard of health, and had occasional pains in the right side. Early in 1890 he noticed some tenderness in the epigastrium and detected a hard swelling there which had been constantly present since, though not increasing in size. His evening temperature during the last three or four months, as he observed it with his own thermometer, ranged from 100° F. to 102° F. There was a fair appetite, no vomiting, no œdema, no chills. The wife thought the sclerotics had been slightly yellow at times. Night sweats had been quite common for several weeks.

He was rather pale and emaciated, weighing but one hundred and six pounds, his normal weight being one hundred and thirty-five pounds.

Examination gave negative results as to lungs and heart, save that the apex beat was close to the left nipple line. Inspection of the abdomen revealed a fullness in the epigastrium and right hypochondrium; a slight glossiness of the skin in the latter region might have been due to the recent use of the tincture of iodine. Palpation revealed the fact that the prominence was caused by a firm body moving with respiration. Deep pressure and deep inspiration caused pain referred to a point under the right seventh and eighth ribs. A sharp edge, feeling like the liver's edge, could be clearly defined running parallel to, and about three inches below, the right half of the costal arch. The area of liver dullness was increased, just external to the mamillary line dullness extending from the center of the sixth rib to a point three inches below the costal arch, where the sharp edge before referred to could be made out. Dullness over the region of the spleen was clearly detectable. Auscultation revealed nothing. Examination of urine negative.

I diagnosed hepatic abscess and advised exploratory puncture and operation in case pus was detected. The advice was not taken. I never saw the patient again until I made the autopsy five weeks later.

Autopsy.—Liver enlarged in all diameters, in the mammary line measuring nine inches from above downward; the capsule, tense, shiny and smooth, except over area size of silver dollar on

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upper surface of right lobe. A firm adhesion existed here between liver and under surface of diaphragm. This adhesion was exactly opposite a smaller, looser and evidently more recent one between the visceral and diaphragmatic pleuræ. The liver was carefully removed with the adherent portion of the diaphragm, and just below the upper surface of the center of the right lobe an abscess cavity was found, the size of a large orange, and filled with brownish-yellow pus of creamy consistency. External and posterior to this and about one-half inch from the surface was a second abscess of similar size, separated from the first by a thin wall, no opening connecting the two being discoverable. Two softened, friable and yellowish areas were seen on section, where to the naked eye the tissues appeared to be breaking down. Microscopic examination showed purulent infiltration and breaking down of tissue[5]. The remainder of the organ was firm, the lobules distinct, the intralobular vessel patulous. A solitary gall-stone was loose in an apparently normal gall-bladder.

Remarks.—The history of bloody stools, fever, etc., before any local signs called attention to the liver would point to the intestinal tract as the seat of the primary trouble. Ulceration, peri-phlebitis, thrombo-phlebitis, septic embolus or emboli carried by branches of portal vein to the liver, and by lodgment there, suppuration, would seem to be the pathology of the case. Long ago the clinical association of dysentery and hepatic abscess was noted. Budd, of England, in the first half of this century, not only recognized their association but regarded the dysentery as the primary, and the abscess as the secondary, trouble. He speaks[6] of "The most frequent cause of abscess of the liver, namely: ulceration of the large intestine, or, more generally, of the intestines, the stomach, the gall-bladder, or gall-ducts, parts which return their blood to the portal vein, to be thence transmitted through the capillaries to the liver." And again—"Admitting dysentery or ulceration of the bowel to be a source of abscess of the liver, it is obvious that the liver does not become involved by spreading of the inflammation, but through injury to the nervous filaments of the sympathetic, or, which is much more likely, by

[5] Sections kindly mounted by Dr. G. H. Weaver, who also assisted at the autopsy.

[6] On Diseases of the Liver. Geo. Budd, M.D., F.R.S., 3d Am. edition, p. 95.

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some contamination of the portal blood. The portal blood may be contaminated either by pus formed by suppurative inflammation of one of the small intestinal veins," etc.[7] These ideas are not strikingly out of touch with our more modern views concerning the pathology of these cases. Kartulis,[8] of Alexandria, in observations on more than five hundred cases occurring in his own practice found dysentery the cause in sixty per cent. He describes an amœboid body which he terms the amœba coli found in all cases of dysentery and of dysenteric abscess. This he regards as the cause of dysentery and of dysenteric hepatic abscess by the "wandering of microbe-holding amœbæ from the intestinal ulcer through the portal system into the liver." That is, the amœba is the conveyance by which the pus microbe travels to the liver. Koch and others on the continent, Osler, Lafleur, Simon,[9] in this country, have made similar observations in cases of hepatic abscess following dysentery.

As to operation in the case in hand: Deep exploratory puncture would have revealed pus. The operation would have to be done in two tempos, as there were no adhesions except over the diaphragm, and operation through the pleural cavity must have resulted in suppurative pleuritis. The presence of several foci of suppuration would have rendered the opening and draining of the first abscess a measure of but temporary benefit, unless perchance by rupture into the larger abscess cavity of all abscesses that formed a single abscess instead of multiple abscesses resulted.

The diagnosis seems clear. Given the absence of all symptoms and signs referable to the chest and the abdominal organs other than the liver, the liver palpably enlarged, edge smooth and sharp, tenderness on pressure over this organ, pain on its movement by depression of diaphragm during inspiration, and the conclusion seems inevitable that there must be hepatic trouble. And when we have in addition the history of constant fever for at least five or six months, emaciation, sweats, the natural inference would be that the trouble was inflammatory suppu-

[7] Budd op. cit., p. 102.

[8] Ueber tropische Leberabscesse und ihr Verhältniss zur Dysenterie. Virchow's Archiv Bd. 118, Heft 1.

[9] John Hopkins Hospital Bulletin, vol. I; Nos. 5, 7 and 8.

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ration, an adequate cause found in the illness of the year previous.

Case 5. On the evening of May 18th, 1890, there was brought to Dr. Earle's hospital for inebriates, "The Convalescence," a man about forty years of age who had been drinking heavily for several days. I saw him about ten that evening, and after giving a few directions for the night thought no more about him until I was asked by the nurse the next morning, to see the patient on account of a pain in the abdomen of which he had complained all night. The man, who was now sobering up, did not remember when he had last urinated, though he felt the desire to do so. I examined the hypogastrium, but was, even then, when suspecting nothing more than a distended bladder, struck by the absence of the characteristic globular swelling that the distended bladder gives, and by the fact that the flatness on percussion was more marked, as the patient lay on his back, in the flanks than in the center. The metal catheter being introduced, and passing readily, there escaped a dark red fluid, having all the appearances of venous blood, and, under the microscope, shown to contain large numbers of red blood-corpuscles. The stream was an interrupted one, varying in the distance it was thrown from the catheter's end with the movements of respiration, and thrown, when the muscles of the abdominal walls were brought into play in the efforts of the patient to force out the fluid, at least four or five inches.

In this way, and by pressure over the abdomen, something over a quart of bloody fluid was withdrawn. Dullness was now peceptible only on the sides. The history the patient gave was of no value whatever on account of his previous condition of intoxication. He remembered nothing of any injury, could not tell whether he had urinated the day before or the day before that. Bruise-marks, apparently recent, were noted on the right knee. The temperature at this time was about 99° F., pulse 120, and weaker than night before. Ordering stimulants and rest, I informed Dr. Earle, who had not yet seen the patient, that our case of drunkenness was apparently complicated by rupture of the bladder.

I was not present at the consultation between Dr. Earle and the surgeon who was called in at the request of the friends for

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consultation and operation, but I understood that the point which decided against the diagnosis of rupture of the bladder was the fact that on the introduction of the catheter the *urine flowed*[10].

The rest of the history is that of repeated catheterization, gradual failure in spite of stimulation, but slight temperature, death at 2 A. M. on the morning of the 21st, fifty-four hours after admission to the hospital.

The only facts of interest obtained from the friends were that on the 17th a physician had been called who prescribed for severe abdominal pain. No history of injury was obtainable. No one had seen the patient urinate, though it had been remarked that he went frequently to the water-closet.

AUTOPSY.—Twelve hours post-mortem. Chest negative. Skull not opened. About one pint of clear, blood-tinged fluid loose in abdominal cavity. Very few loose adhesions over coils of intestines in lower abdomen, where was a slight amount of fibrinous deposit in flakes on intestines. Posterior wall of bladder showed a gaping wound, with irregular edges, extending from above downward and to the left over two inches, and involving all coats of the viscus. Other organs negative, save that one kidney showed changes incident to chronic interstitial nephritis.

REMARKS. Operation in such a case as this should have been abdominal section and repair of the wound, and would have been done had the consulting surgeon made a correct diagnosis. Was his error an excusable one? Were there not facts enough in the history and could not facts enough be elicited from the examination of the patient, to enable one to come to a certain and absolutely positive diagnosis?

Excluding those cases in which the bladder suffers a penetrating wound from a bullet, or the knife of the assassin, or the instrument of a surgeon, also those cases where the rupture is a complication of fracture of the pelvis (and these two injuries are not infrequently associated), and excluding those cases where a bladder distended because of obstruction to outflow of urine, as from urethral stricture, gives way owing to impaired power of resistance of its coats through disease, as inflammation, malignant growth, diverticula, hernia of the tunics, pericystitis, etc., excluding

[10] Dr. Bayard Holmes, who saw the case, confirmed my diagnosis of rupture.

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all these, the history of rupture is usually a trauma received upon abdomen when the bladder is distended, severe pain, shock, desire to urinate but inability to do so. Drunkenness gives oftenest the requisite factors for a rupture of this kind, viz.—distended bladder, relaxed abdominal walls and a trauma. Drunkards are notorious for the amount of urine they secrete, their bladders are often full, a stumble against the corner of a table, a blow, a kick, may suffice to rupture the over-distended bladder, the blow coming with undiminished vigor upon the organ unprotected by the relaxed abdominal muscles. The blow may be so slight and the pain so trifling that in the semi-stupid state the intoxicated man takes no notice of it. Often, however, severe pain is followed by the signs of shock, the pallid countenance, rapid pulse, clammy perspiration giving evidence of severe injury. If the physician be not summoned at once, he will be, when the patient discovers the desire to urinate but inability to do so.

The physician, if he examine the abdomen as he should, before passing a catheter, finds the usual physical signs of fluid loose in the abdominal cavity. The catheter withdraws nothing or a varying amount of urine mixed with blood and serum. Many of the articles on rupture of the bladder lead one to expect no urine or only a few drops of bloody urine. It is important in this connection to remember that, if the rent be large and the catheter passes through this rent, the end of the instrument is as much in the abdominal cavity as though there were no bladder at all. Now, if there be no accompanying peritonitis, the patient by diaphragm and abdominal muscles tries to force out the fluid as patients do who are being tapped for abdominal ascites, and the result is an interrupted stream of bloody urine. If peritonitis exist, pain induces the involuntary fixation of the muscles and almost no urine may escape.

In the case in hand a quart of urine, blood and serum was obtained, the patient aiding by bringing into play all the expulsive muscles, and also by making pressure over the abdomen with his own hands. There was probably no peritonitis at this time. The urine was aseptic. We infected the abdominal cavity by the catheter and the autopsy showed commencing peritonitis in the lower part, only, of the abdomen. Will this not explain the facts in some of the recorded cases where patients have shown no signs

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of peritonitis until days after the accident and after they have been catheterized numerous times. Death in many cases occurs from uræmia and not from peritonitis, though the latter is often excited by the use of an unclean catheter.[11]

All the signs and symptoms above mentioned were present in the case in question, drunkenness, a trauma (the recent contusions about the knee being evidence of the same), pain in abdomen, inability to urinate, physical signs of fluid in abdominal cavity, bloody urine by the catheter.

If there had been any doubt in the mind of the surgeon, other aids to diagnosis should have been employed. The injection of an aseptic fluid such as sterilized water or a solution of boric acid, carefully measuring the same and noting the amount recovered by the catheter, has been often employed, the loss of any great amount being regarded as an evidence of its escape from the bladder. If the bladder be intact, the characteristic physical signs of a distended bladder should be manifest upon injection of the solution, and especially if a Barnes' dilator be placed at the same time in the rectum, thus lifting the bladder close against the abdominal wall where it can be easily detected. Keen[12] has tried, and successfully, the Senn hydrogen gas test as an aid in the diagnosis of these cases. Given a rupture of the bladder, and the injection of hydrogen gas or air per urethram would cause general distention of abdomen, tympany being noted on percussion even over liver area. Injection into a sound bladder would cause appearance of globular mass in hypogastrium tympanitic on percussion. Could this test not be applied with equal certainty of its infallibility, in extra-peritoneal rupture, the escape of air or gas into the pericystic cellular tissue giving the usual signs of subcutaneous emphysema?

This is the third case of ruptured bladder I have seen since May 1st, 1889. The first case I reported in *The North American Practitioner* for September, 1889. The second is reported in the same number of the same magazine by Dr. Henry F. Lewis. A

[11] Ultzmann, Die Krankheiten der Harnblase, 1890, quotes case of Harrison, and of Jas. D. Gillespie, where patients did not show signs of peritonitis for several days after the injury, and after they had been often catheterized.

[12] Annals of Surgery, April, 1890.

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post-mortem diagnosis in another case was made in the morgue of the County Hospital in the same year.

In the Registrar's office at the County Hospital there are the histories of two cases of ruptured bladder complicating fracture of pelvis, these cases occurring in January and February of this year.

Six cases in less than two years where direct examination of bladder before or after death has confirmed the diagnosis. It leads one to think that either by peculiar circumstances Chicago has been favored with more than her due proportion of such injuries, or that the rarity of the disease has been exaggerated. Of sixteen thousand seven hundred and eleven surgical cases treated at St. Bartholomew's Hospital, 1869–75, but two cases of injury to the bladder are recorded.[13]

May it not be that the vague and unscientific diagnosis, "internal injury," at times conceals ignorance of this lesion presenting no unsurmountable obstacle to diagnosis and offering such good opportunity for successful surgical interference, if the nature of the difficulty be recognized early?

If the recital of these cases shall have weight as a plea for more frequent autopsies, in private as well as hospital practice, and for a more careful use of trained eye and ear and finger and brain in diagnosis, the object of this paper will have been accomplished.

751 Warren Avenue.

[13] Quoted by Coulson, Diseases of Bladder, Sixth Edition.

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Editorial.

THE PRESENT NUMBER.

Considerable alteration in the arrangement of this number of THE RECORDER is explained by the large variety of original articles available, the scientific quality, value and importance of which brook no delay in their publication. Under such circumstances the department of "Medical Advancement" is cheerfully surrendered, and with it the editorial pages and space usually occupied by book reviews. It is conceived that matter of the sort presented this month is much more acceptable than clippings from foreign and home exchanges, valuable as is such material, and the other departments mentioned. A legitimate amount of gratification is felt that THE RECORDER has been so liberally dealt with by the profession in the matter of contributions and support. The next number, it is a pleasure to announce, will contain the valuable and interesting Address in Medicine of Dr. Billings on the subject of Koch's lymph, read before the Illinois State Medical Society last month, the Address in Surgery prepared for the same occasion by the late lamented Professor Parkes, and an illustrated paper on Retinal Sarcoma by Dr. Colburn, besides many papers, among which will be a thorough review of the subject of La Grippe, treated by a number of writers from special standpoints.

Although a formal notice was mailed the members of the Chicago Medical Society in March, it is not apparently understood by all that THE RECORDER is furnished members of that organization *gratis*, the only condition being that they have proper standing on the Treasurer's books. Failure to receive any or all numbers should be promptly reported to the publisher.

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Society Proceedings.

THE CHICAGO MEDICAL SOCIETY.

Regular Meeting May 4th, 1891.

The President, Dr. DANIEL R. BROWER, presiding.

Minutes of last meeting were read and approved.

Dr. BRANDT asked the privilege of making a motion, prefacing the same with a statement that largely through the efforts of the committee appointed by the Society to visit the various county institutions and make recommendations to the Board of County Commissioners regarding improvements in them, there was soon to be built in the hospital grounds a Detention Hospital for the Insane, and there would be an appropriation soon made for the construction of a morgue. The motion was as follows:

RESOLVED: That a committee of three, one from the North, one from the West and one from the South Sides, be appointed to confer with Dr. WARE, Health Commissioner, on the sanitary requirements of the city.

This motion was adopted unanimously, and later in the evening the President appointed Dr. J. R. BRANDT for the North Side, Dr. WELLER VAN HOOK for the West Side, and Dr. ARCHIBALD CHURCH for the South Side.

Dr. J. H. STOWELL, Chairman of the Membership Committee, reported favorably on the following applications for membership: Dr. Jas. G. McCurdy, Dr. Chas. J. Dietz, Dr. C. A. Weil, Dr. W. N. Lowrie, Dr. O. Prescott Bennett, Dr. Wm. A. Mann.

The gentlemen were thereupon elected members of the Society.

The following named gentlemen were proposed for membership: Dr. A. I. Bouffleur, Dr. A. E. Rocky, Dr. Wm. A. Baum, Dr. Ely McClellan.

The applications were referred to the proper committee.

Dr. F. H. JENKS, of Aurora, read a paper, "Report of a Case of Helferich's Operation for Gangrenous Strangulated Hernia." (See p. 329.)

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The paper was discussed by Dr. CLARENCE A. EARLE, who said: It seems to me the applicability of this operation should really be confined to a very limited number of cases. In the first place, if we are in doubt as to whether the gut is gangrenous or not, this operation would certainly tend to compromise the possible integrity of the intestinal loop; if we are not in doubt as to its gangrenous state, there is no question that, if the condition of the patient will allow, an enterectomy should be made at once. It seems to me the proper procedure in cases of doubt is to return the intestine to the abdomen, to fix it by means of a suture through the mesentery, or even the gut itself, and wait fifteen or twenty minutes to see if circulation returns. We know that a great many cases which a few years ago were regarded as gangrenous are now returned to the abdomen with perfect safety, and although I am not an advocate of returning a gangrenous gut to the abdomen, yet in a report of three cases, made by a noted surgeon in the *Lancet* last autumn, in which there was no question of the gangrenous condition, the gut was returned to the abdomen with good results.

Dr. F. H. JENKS, in closing the discussion, said: I can see no reason why this operation will interfere with the viability of the gut, and if it is inclined to degenerate at all, the application of the sutures, if done as recommended by Professor Helferich, will not interfere in any way with the circulation, and of course the constriction has been relieved as in ordinary herniotomy. The only possible danger I can see would be in the dressing not being absolutely antiseptically clean; otherwise I cannot see why the gut is in any more danger of becoming gangrenous than it would be in the abdominal cavity.

Dr. BOERNE BETTMAN read a paper entitled "Dislocation of the Lens into the Anterior Chamber." An account of two cases. (See page 317.) A paper on "Removal of Capsule of the Lens" was presented by Dr. C. M. HANSEN. (See page 334.) In their discussion,

Dr. E. H. HOLMES stated that he had treated three patients from whom he removed the whole lens lying in the anterior chamber. In each instance the extraction was effected without the aid of special instruments and without continued prolapse of the iris.

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In a fourth case, in which the capsule had been ruptured, the lenticular portion had escaped into the anterior chamber and produced much pain and congestion of the eye. In spite of difficulty in removing this lens from its position by the aid of a small blunt hook, recovery was quite rapid. It was deemed advisable in this case to excise the prolapsed portion of the iris, rather than attempt to replace it in the anterior chamber.

Eserine, by contracting the pupil, tends in some cases to prevent the lens from falling into the vitreous humor during the operation for its extraction.

Dr. HOLMES stated, in reference to capsular remains after operations for cataract, that their rupture was accomplished without difficulty by means of Knapp's needle knife, whenever the membrane is very thin.

Whenever the membrane is tough, as in some cases of congenital cataract, and in cases of deposits from secondary iritis, great skill and judgement are required to secure an opening through the obstructed pupil without dangerous injury to delicate tissues within the globe.

The two procedures which are perhaps most advisable are, that in which two stop needles are introduced through the anterior chamber to tear asunder the membrane: and that in which a stop needle and fine iris hook are used.

Dr. ROBERT TILLEY: I have not much to add to what has been stated in regard to this interesting subject. Personally I have never seen a dislocation into the anterior chamber, and dislocation into the vitreous I do not think comes so much under discussion, but I have seen a couple of cases of this latter class, one caused by a blow from a whip handle. Both were dispensary cases and disappeared as they sometimes do, and I never heard of them afterwards.

The other question interests me more, simply because on Thursday last I performed this operation which Dr. Holmes has referred to, removal of part of the lens substance and capsule after an unsuccessful cataract extraction. The man had had both eyes operated upon at Quincy. The left cornea had sloughed and operation was done on the right, with the result that the pupil was almost closed with the thickened capsule and cortical substance in the small pupil that remained, and a kind of calcareous

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deposit in the remnants of the capsule. There was no chance whatever of giving the man sight but by performing iridectomy and making an effort to remove at least a part of the capsule and cortical substance. Consequently, on Thursday last, I did iridectomy and saw that there could be no expectation of vision apart from the removal of that substance in some way, so I put in forceps and drew it out as far as I thought necessary in order to get a clear pupil. This was so far successful that immediately after the operation he could count his fingers, and on Sunday last he could recognize faces that he had not seen for years.

Dr. BOERNE BETTMAN, in closing the discussion on his paper, said: I do not wish to take up the time of the Society, therefore will merely state that I was very much pleased with the remarks of Dr. Holmes, and especially gratified to know that he in his long experience has only seen three of these remarkable cases, proving conclusively the assertion made in the beginning of my paper, that they are of extremely rare occurrence.

Dr. C. M. HANSEN finally said: I thank the gentlemen for their kind remarks on my paper, and would reiterate what I said, that I would not do the operation unless there was no other chance. In this case I told the patient there was an even chance for him to lose his eye or to gain something; I should never do the operation, without preparing the patient for the worst.

PRESENTATION CASE.

THE PRESIDENT: I wish to present to the Society a very interesting report sent me by my friend Dr. James H. McBride, Superintendent of the Wauwatosa Sanitarium for nervous diseases at Milwaukee. He sent me a report of the case and a lantern slide and a section of the medulla. It is a case of occlusion of the cerebral arteries by a process which the doctor calls thrombus, but which some would prefer to call embolism.

I exhibit this lantern slide to you not only because it illustrates in an important way the paper, but because of the slide itself; it is prepared by a novel method devised by Dr. McBride, and consists of a small piece of ground-glass on which the drawing is first made and then rendered transparent by shellac or Canada balsam and mounted in the usual way. It is the cheapest and simplest way of producing lantern slides that I have heard of. The doctor, in writing to me about these slides, said they could

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be produced at a cost of four or five cents each. His wife is his artist and I suppose the artist's work is not included in this price. The lantern slide and section will be shown by the stereopticon through the kindness of the McIntosh Co.

CASE: A man, aged twenty seven, was healthy up to time of the present attack. Two months before admission to hospital, he had an attack of acute rheumatism, and while recovering from that, had an attack of hemiplegia with aphasia. On examination I found the following condition: right lower face completely paralyzed; right arm also completely paralyzed; right leg paretic; the hip muscles being chiefly involved. No discoverable anæsthesia in the paralyzed parts. Motor aphasia; cannot utter a word; understands everything that is said to him; says that he can read print and written characters, but sometimes finds himself a little confused in attempting to read. All tests for auditory and visual centres show these to be perfectly normal. Can walk about the ward with a cane, though drags the right leg a little. On examination, find that patient has aortic murmur, indicates that his physician told him that he had acute heart disease during the attack of rheumatism. Patient suddenly became unconscious and died in a few hours. On autopsy found thrombus in the middle cerebral artery just above the point where the nutrient arteries for the basal ganglia are given off. The following parts of the cortex were found softened: posterior one half of third left frontal; posterior third of second left frontal; lower two thirds of ascending frontal and parietal; supra-marginal lobule; posterior and upper one half of first temporal. Everywhere else the brain was healthy.

The three especially interesting points in this case are: 1. The paralysis of the lower half of the face on the right side, illustrating the law that the bilaterally acting muscles for the upper half of the face are innervated by both hemispheres. 2. That the hip muscles were paralyzed more than those for the leg, which corresponds exactly with the facts of localization, the softening just involving the region for hip movements, but not those for the remainder of the leg. 3. That not all of the region supplied by the middle cerebral was softened, which shows Duret's statements to be correct, that there is an anastomosis between the cortical cerebral arteries in some cases, and that in

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this case part of the territory of the middle cerebral was saved by this anastomosis. Unfortunately part of the motor tract spoiled so that it was not all investigated. I have one section of the pons and several of the medulla, one of the latter of which I present. This shows that the left anterior pyramid just above the decussation is degenerated; as you will observe, it is unstained and looks straw-colored under the microscope. It is prepared with Weigert's staining.

Dr. ARCHIBALD CHURCH said: I am much interested in this case, and I regret that in some of the details the report is not more full. The posterior inferior portion of the softened spot, as shown in the diagram, extends back to the convolution in which, according to some authorities, the centers for binocular vision are located. It would have been interesting to know the extent of the visual field in each eye in this case; and to have made elaborate tests in regard to the ocular fields of vision to see if they were in any way impaired. As it appeared from the diagram, the first temporal convolution was implicated, and it is asserted that here is located the centers of hearing. Both these positions for hearing and vision are disputed territory, so that every case which in any way bears upon this subject becomes of extreme importance. I agree with Dr. Brower, that embolism rather than thrombosis was probably the original condition, from the association of rheumatism and organic cardiac disease in the case antedating the occurrence of the paralysis.

EXHIBITION OF SPECIMEN.

Dr. ROBERT TILLEY: I would like to exhibit this specimen, which was of some interest to me and several others who were present this afternoon when I removed it.

The patient came to me last week with the left eye displaced to the extent of fully three-fourths of an inch. There was double vision, of course, and both nostrils were completely occluded, so that she could not breathe through the nose at all. There was a very indefinite history, which I will not go into at length, as I hope to report the case more fully later on. There was evidence of polypus or some abnormal growth in the anterior part of the nose, but it was so small a part in comparison with the great mass which seemed to be encroaching upon the orbital cavity that I decided it would be entirely useless to attempt to extract it

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through the nostrils; so I made an incision along the nose about three-fourths of an inch from the tip and extended it up the median line about to the frontal sinus, turning a little to the left, and found that the nasal bones had been practically eroded so that I could cut through them without difficulty. I turned the flap over so as to expose the growth as much as possible, thinking I could perhaps encircle the whole with a wire snare, and thus remove it; but I found it was friable, and I had to get out the upper part in order to get the lower part, and finally, after having extracted masses so friable that I could hardly collect them together, I took out this immense piece from the posterior part of the nares where it was also encroaching upon the orbital cavity. Erosion of the bone was so great that I exposed the dura-mater just beneath the orbital cavity. What will be the final outcome, I do not know. Just before I came down town this morning the patient was breathing through both nostrils, which she had not done for a long time, and in other respects she was feeling very comfortable. I suppose the growth is a kind of myxoma with some fibrous condition. I took out everything I could possibly find in the nasal cavity, and I could put my finger in through the opening and pass it out through the anterior part of the nose. After the operation the eye went back to its place, but not completely, and the movements of the eye were apparently good so far as I could judge.

Adjournment.

JOHN EDWIN RHODES, *Secretary pro tem.*

Regular Meeting May 18th, 1891.

President BROWER presiding.

The minutes of the last meeting were read and approved.

The Committee on Membership reported favorably on the applications of Drs. A. I. Bouffleur, A. E. Rocky, Wm. L. Baum, and Ely McClellan. These gentlemen were elected members of the Society.

The following applications for membership were read and referred to the Committee on Membership: Drs. Nicholas Senn, John M. Dodson, Henry E. Vreeland, C. B. Hanvey, A. G. Heather, Morris R. Weidner, John D. Ware, D. R. McMartin, Jas. T. Britzker, Carl Beck, Ethan A. Gray, Henry Curt Welcker.

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A paper was read by Dr. Jas. B. Herrick entitled "Report of Cases," with autopsy in each instance and exhibition of specimens: (1) Pulmonary and Intestinal Tuberculosis. (2) Carcinoma of Œsophagus and Stomach. (3) Appendicitis—Perforation—Peritonitis. (4) Multiple Abscesses of Liver. (5) Intra-Peritoneal Rupture of Bladder. (See page 344.)

Dr. Nicholas Senn, having been invited to present a paper before the Society on Koch's lymph, read one with the title, "Away With Koch's Lymph!" (See page 281.)

Dr. J. B. Murphy in opening the discussion said: After listening to Dr. Senn's paper and his statement of the results of his method of treatment, I must say that I have had a very different experience. In the first place, let us consider what is expected of Koch's lymyh, and what are the changes which Koch says he can produce with his lymph. He claims that he can produce coagulation necrosis in the tubercular tissue, and then, if there is a means of exit for the germ from the place where death is produced, the reparative power of the tissue will heal the lesion that is left. As a result of this coagulation necrosis we have two classes of symptoms, the local and the constitu tional. Previous to Koch's discovery we had remedies with which we could produce the constitutional reaction, but we had nothing that could be sent as a special messenger from one part of the body to another and produce an inflammatory effect. We had numerous remedies that could be sent to special organs and alter their functions, but none that would produce an inflammation at a distant point. That is wherein it exceeds all previous medical discoveries. Von Bergman, in a late paper, puts Koch's lymph above all modern discoveries. He asks, "Can we use this discovery for the purpose of healing tubercular lesions? We can produce local changes at a distance from the place where it was inserted, but can this lymph be so used as to produce healing?" He answers in the affirmative and uses lupus as an example. If the lymph be used for the purpose of producing a local necrosis, and not killing the germs, what can we hope for in the knee-joint or in a gland that has no opening, as suggested by the speaker, where there is no chance for the living germ or its spore to escape? Why, a recurrence of the attack, of course. But let us provide a means of escape for this dead product and the bacilli

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in and around it, then we have left healthy granulation tissue, which, of course, is subject to reinfection, but as soon as sloughing takes place we have produced a new capillary circulation in the neighborhood. This new circulation is a protection against further infection, and this means the elimination of the bacilli, leaving a non-specific ulcer, the same as where no tuberculosis had existed. We know that cases heal where the bacillus and its ptomaine are overcome by the resistance of the connective tissue without medical aid. Let us see if we cannot use this destructive effect, first for removing the tissue, and then if we cannot put the patient in a condition of repair. In Dr. Senn's report of cases he mentions that at one time they went as high as twenty-five milligrammes. That, I would say, was a very small maximum dose; from the history of the injections I would think that the treatment was inefficient, that it was not pushed with sufficient rapidity, and that the doses were not large enough for surgical cases. Von Bergman has used in his cases a gramme to a gramme and a half of the original fluid before he got reactions; then he produced the necrotic changes and the benefit; but to get the local reaction you must inject sufficiently large doses to produce coagulation necrosis, and you cannot expect any improvement in the case if this necrosis is not produced. Where there is temperature reaction alone it is not sufficient to say that we have produced the typical reaction of the lymph. Temperature reaction has been and can be produced without the case being tubercular. Von Bergman reports a case of actinimycosis in which there was slight temperature produced but no local change of tissues. He also reports a carcinoma in which he produced slight temperature but no local reaction. That is what makes it different from other remedies, it produces a local inflammation which can be very different in degree; it can be a sloughing of the entire surface, and in that sloughing it can remove all the bacilli and leave a granulating surface, or it may be only a slight redness and induration with an exfoliation of tissue. I had a surgical case of the former kind, a tubercular ulcer in the vicinity of a tubercular spinus. The patient was under treatment from May, 1890, to February, 1891. The ulcer had been scraped, burned and treated with iodoform, but without improvement. I gave a primary injection of one-half milligramme, and in eleven injections

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increased to eighty milligrammes; at the end of twenty-five days the lesion was completely healed, and remained healed up to date, three months afterwards. The process of healing was: first, congestion; second, sloughing; third, cicatrization of the healthy ulcer. In another case a patient aged twenty-seven had been treated for pulmonary tuberculosis for eleven months. There were numerous bacilli, consolidation down to the fourth rib, and expectoration of purulent material. I began the injections with half a milligramme, and when I reached five milligrammes the reaction was enormous, the pulse got weak, she became cyanosed, and I was alarmed. Four days afterwards I repeated the injection, reducing it to four milligrammes, and then ran it up to six. At that time the patient had an attack of the grippe, and at the end of three weeks came to my office to tell me she was well. Cough, temperature and expectoration had entirely disappeared. I asked her to give me some of the sputa, but she said she could not get any, she did not cough any more, and I have not since been able to get a specimen of the sputa. There was no doubt about the diagnosis in this case, as expressed in Dr. Senn's cases of recovery, the bacilli had been seen time and time again.

As to the diagnostic importance of Koch's lymph, I will speak of a case that came under my observation. She had expectorated a large quantity of blood, râles could be detected in the upper portion of the lower lobe on the right side. Dr. Ingals and Dr. Lee, whom I called to see the case, considered it a typical case of tuberculosis, from its course, although no bacilli had been found in the sputa. The absence of bacilli in this case is not as significant as though the cough had continued for a long time, because bacilli are rarely found before the nineteenth day after the initial hemorrhage, where the case begins with hemorrhage and there is no cough. The patient was put under this treatment, but no reaction was produced, and in ten days the dose was run up to a centigramme. This caused dizziness and a sense of nausea, but no typical reaction. The cough disappeared, the expectoration disappeared, the râles and consolidation disappeared, and when Dr. Ingals examined this patient again he said that she seemed to be perfectly well. There is certainly a doubt in my mind as to the accuracy of the diagnosis, and it will not be included in the cases considered cured.

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In the treatment of bone tuberculosis we expect healing to take place after twenty or thirty days. What changes are expected to take place in tuberculosis of the bone? Necrosis. If you have a fracture it will take, for separation and necrosis of the fragments, six or eight weeks, but you put the patient under tuberculin and expect something mysterious to occur, you expect the patient to recover in three or four weeks. But necrosis can not take place in that short time.

I do not think that sufficient time has yet elapsed to enable any one to make a positive statement as to the results of the lymph treatment in bony tuberculosis. It is different with the skin, because the destructive and reparative processes in that neighborhood go on more rapidly, but in bony tuberculosis we can not draw our conclusions so quickly, because there must always be a separation of the dead material, and that requires time.

In place of accepting the suggestion, "Away With the Lymph," I think this agent of unquestionable potency should be more fully investigated.

Dr. HENRY GRADLE: No one present could help being convinced of the sincerity with which Dr. Senn has investigated this subject, and the earnestness with which he voices his protest. Still, where there is so much variance in the opinions of men, the warning of one man can not be accepted as final. At the recent congress of German surgeons in Berlin Dr. Bergmann related an experience not very different from that of Dr. Senn, although he had been at one time an ardent advocate of tuberculin. Still, he closed his remarks with an earnest appeal to continue experimentation with it, because he considered it the most important theoretical discovery of the age, and this view was fully sustained by every one who spoke on the subject. Similarly at the congress of German physicians at Wiesbaden about the same time, a few spoke of a very unfavorable experience, but no one dared to say that the further use of the lymph should be dropped, and all agreed that it was a remedy of unprecedented power and importance, and even if we did not yet understand its best mode of employment we were warranted in still further working with it.

Tuberculin can accomplish what no other remedy does, to our knowledge; it excites a specific change in a specific tissue. We

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can only compare it to the action of the iodides and mercury in certain syphilitic lesions. We can influence the products of this disease with certainty without damaging the rest of the organs, while obtaining an absorption of the syphilitic new formation. Similarly it has been learned that the tubercular tissue is influenced in a specific way in the majority of cases of tubercular disease, that these changes consist in the inflammation of the tubercular tissue, an inflammation which leads in a reparative direction and tends toward a cure, but which in the majority of cases does not accomplish the desired object, for reasons with which we are not yet familiar. It can not be presumed that a man of Koch's record would have published his results without having absolute proof of what he claimed. In the animals experimented upon the disease was arrested and reinfection prevented by inoculation with tuberculin.

But Koch mentioned in his first note that he was very unfavorably impressed by the difference in susceptibility between the guinea pig and man, as a guinea pig could stand without fatal results the injection of two and one-half grammes of lymph, while twenty-five centigrammes was the highest dose he had used on the healthy individual, and that with almost dangerous results, while a dose of even one milligramme will affect the majority of tubercular individuals. Still, this substance has accomplished in a great many instances, under the eyes of competent observers, results which could not have been obtained in any other way. There are now on record a large number of cases of tuberculosis of the larynx which have been definitely cured. We know that ordinary tuberculosis of the larynx rarely heals by itself, and that it can not be arrested with absolute certainty by even the most perfect surgical methods, but there are now on record, by competent observers, a definite number of cases that have been cured by the use of tuberculin.

Cases of joint disease have been benefited while in the initial stage. There is no doubt about the danger of using tuberculin in advanced cases, but in the initial stage results have been published which can not be equalled by any other remedy. Stricker reported eight cases cured out of nine of initial phthisis in soldiers, while of forty-seven moderately advanced cases one was cured and the majority improved. Cornet claims out of seventy-five

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initial cases sixty per cent. cured and about thirty markedly improved.

It seems that the conditions under which consumptive soldiers are kept in German hospitals are particularly favorable, for Vogl, of Munich, claims improvement or cure in every one of twenty-four cases of initial consumption among young soldiers. Such observations can not be gainsaid, even if others have not had a similar favorable experience with the remedy.

Personally I can say very little, as my experience in scrofulous eye disease has been suggestive rather than demonstrative, but from a careful review of the literature since the subject was first announced it has seemed to me that tuberculin will produce changes tending to cure in a fair proportion of cases of tuberculosis, but that we can not yet control the conditions which will lead to an ultimate cure.

It is true tuberculin is not devoid of some danger, but Virchow's statements have been very often misquoted. He has distinctly disclaimed that he intended to discredit tuberculin or warn people against its use; he only pointed out certain dangers possible.

As to the diagnostic value of tuberculin, I think Dr. Senn has justly stated that the fever produced by it is not a proof of the presence of the disease, nor its absence a positive indication of the absence of tuberculosis. The local reaction, however, if it occurs, is absolute. In the case of lungs or other internal organs it may be difficult, if at all possible, to detect the local reaction with sufficient certainty to use it for diagnostic purposes; but in tuberculosis of the skin or joints the reaction, if it occurs at all, is sufficiently marked to be used for diagnostic purposes, and in such cases it can be stated with certainty that the reaction is very rarely wanting, so rarely that its absence is almost positive proof of the non-tubercular nature of the disease, while its presence is an absolute demonstration of the tubercular character of the lesion. Of course in view of the dangers of tuberculin, which must not be underrated, it should be resorted to only where other means of diagnosis fail.

Dr. G. C. Paoli: Dr. Senn's paper on Koch's lymph was full of valuable facts, and particularly interesting on account of many points taken from his own experience. Nothing in the annals of

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medicine has created a greater excitement than the glad tidings of Koch's discovery, by which he claimed that he could cure tubercular consumption. But this glorious idea soon vanished like a falling meteor. The idea that all diseases are produced by bacteria was never heard of before Dr. Koch went to India, and those who adopt this opinion forget that bacteria exists in every normal human being; that we have millions of them in our tongues and in our bodies; also, even the new-born babe has its share; and it is accepted by many learned men in the profession that bacteria are the product and not the cause of disease.

Dr. EDMUND ANDREWS: I would like to make a suggestion growing out of this matter. Bacteriologists have obtained from the microscopic fungi not only tuberculin, but a great number of other poisons, such as ptomaines, etc., some of them having quite singular and powerful qualities, but so far as I am aware there has been no complete study of the secretions or juices of the large fungi which abound in the woods and fields. We know that many of these fungi produce in their own tissues virulent poisons, we presume they are very different from each other, and it is probable that some of them would turn out upon examination to have valuable therapeutic qualities.

Dr. A. J. OCHSNER: Early in the application of Koch's lymph the idea suggested itself to me that, knowing how to kill tubercle bacilli in tubercular joints by means of the injection of iodoform and glycerine, it might be advisable to loosen them with the lymph before killing them with the iodoform, and I have been studying in that direction to a slight extent, but have only come across one case which seemed suitable for this experiment. This was a man forty-six years of age, who had been disabled from work for two years by a tubercular knee-joint involving the synovial membrane and the internal condyle. The knee was flexed at an angle of one hundred and forty degrees. This patient came under my care in June, 1890, and I treated him with ten per cent. iodoform in glycerine injected into the joint once in two weeks for three injections. Then I sent him home or six weeks, at the end of which time I made two more injections. When he returned the third time Koch's lymph had arrived. I made another injection and soon afterwards applied Koch's lymph for a number of times, getting severe reactions at

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first, but no reaction at all at the last injection. He received the first injection January 19th, 1891, of one milligramme. This was repeated every second day for three injections, and then at intervals of from three to eight days for six weeks, increasing to five milligrammes. In the meantime I made three injections of the iodoform into the joint.

The character of the fluid in the joint up to the time of using Koch's lymph had always been cloudy, but after using the lymph in connection with the iodoform and glycerine the fluid became clearer, and at the last injection, eight weeks ago, the fluid was perfectly clear.

The patient went home and has been doing a great deal of work for six weeks, his occupation being the laying of ties in constructing railroads.

I have had an opportunity of observing forty joints which were cured by the use of iodoform and glycerine injections alone, but the progress seemed to be more rapid in this case after the two methods were combined.

From a theoretical standpoint, it might be well to cause a necrosis of the tubercular tissue, thus setting free the microbes in the joint, and then kill them with the iodoform-glycerine emulsion.

Dr. NICHOLAS SENN, in closing the discussion, said: I will say just a few words more, particularly with reference to the modus operandi of the remedy. We all know that Koch claimed that the favorable action of tuberculin on tubercular tissue consisted in its producing a coagulation necrosis, in other words, in anticipating the natural pathological changes incident to tubercular processes. I believe that this reasoning and explanation of the favorable effect of the remedy is upon a wrong basis entirely. If I know anything about nature's method in arresting a tubercular process it is this: I look for favorable conditions when the tubercular focus is surrounded by a healthy thick wall of granulation tissue. Produce in that granulation tissue changes that are calculated to destroy the vitality of the cells and you tear down the wall of protection to not only the surrounding tissues, but to the organism. I prefer, in cases of that kind, to resort to a treatment that has an opposite effect, and it is from this fact that we now look with so much confidence to the application of

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iodoform in the treatment of local tubercular lesions. This remedy does not produce a coagulation necrosis, but an entirely opposite effect; it stimulates the healthy tissue to an active response, and the active granulation tissue formed around the infected focus protects the tissues outside. If I were to remove a tubercular focus I would do it by means which have a more decided effect in accomplishing this object than Koch's lymph; I mean by surgical interference.

The first speaker stated that tuberculin produces no effect on any other lesion. I must differ from him on this point, because within the last two or three weeks two cases have been reported from Vienna where Billroth claims that he succeeded in curing two obstinate cases of intestinal actinimycosis by injection of tuberculin. But we hear of more wonderful results. I know of two physicians who claim that they have cured a number of cases of locomotor ataxia, and if you search the literature you will find more wonderful claims than this. It is one of the strangest things in medicine that when a new remedy comes up the results are so much at variance. While one man claims almost universal success another makes an opposite assertion; but after all the most reliable jury on such questions is the people. In Milwaukee Hospital we became depopulated of tubercular patients, not because they were refused admittance, nor because physicians refused to treat them, but they watched the result from day to day with more anxiety than the physician himself, and what they saw and heard was not encouraging for themselves, and day after day they left the hospital with no hope for the future. Two cases of lupus that came into the hospital in tolerably good health went out walking skeletons, and with the local lesions no better than when they entered.

It is a sign of the times when the Bavarian government passes a legal enactment absolutely prohibiting the use of the remedy. I have no doubt the Bavarian surgeons have tried it faithfully, and if the results had been nearly as good as has been reported here this evening we would not have heard of such a legal restriction. I am firmly convinced that in less than a year from now tuberculin will no longer be used as a diagnostic or therapeutic agent.

Dr. Edmund Andrews read a paper entitled "Cadaver Experi-

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ments to Determine the Best Method of Removing the Gasserian Ganglion for Facial Neuralgia." Illustrated by a number of drawings. (See page 322.)

Dr. J. J. M. ANGEAR said: As I understand Dr. Andrews, the object of this operation is to get rid of the ganglion because it is supposed to be diseased. While the Doctor was demonstrating his procedure I wondered why we could not put in a pair of scissors, slit up the covering, and destroy the ganglion, which is of soft material, and thus the whole ganglion might be eviscerated with less trouble than it seems Dr. Andrews has gone to.

Dr. EDMUND ANDREWS: I tried to work that on a cadaver. I injected a carotid artery first, and then proceeded to slit into the capsule, and tried to work the ganglion out with a small curette. I succeeded once passably well, but in my second effort I got some of the injection of the carotid returned. I will state that the ganglion is not very soft. Perhaps its lower layer is, but there is a fibrous element in it which gives it toughness, and it will not yield to curetting or mild scraping in the upper half.

The paper of Dr. J. J. M. ANGEAR on "A Case of Gunshot Wound in the Cervical Spinal Cord" was postponed on account of the lateness of the hour.

On motion adjourned.

JOHN EDWIN RHODES, *Secretary pro tem.*

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News Items.

Dr. E. B. Holden has been appointed Assistant County Physician.

A law regulating the practice of midwives has been enacted in Minnesota.

Dr. Vira A. Brockway has removed from 411 South Leavitt street to 33 Campbell Park.

Dr. Fordyce Barker, of New York, died May 30th, of apoplexy, aged seventy-three years.

Dr. G. Frank Lydston has removed his residence to 425 Center Street. Telephone 3593.

Dr. C. H. Lodor has temporarily removed his office to 3130 Michigan Avenue. Telephone 8490.

Dr. J. C. Hoag has removed his office and residence to 58 Forty-third street. Telephone 9982.

Dr. Henry Hooper has removed his residence from 215 Dearborn avenue to 541 North State street.

The fifty-ninth annual meeting of the British Medical Association will be held at Bournemouth July 28th to 31st, inclusive.

Dr. John A. Robison has changed his office hours at 70 State street. He is now at that number in the afternoon from 1 to 2.30.

The seventeenth meeting of the German Association of Public Hygiene will take place at Leipzig from September 17th to 20th.

The hospital of the Policlinico at Rome is likely to remain uncompleted, as the government is compelled to cut down expenses.

Dr. Joseph Leidy, M.D., LL.D., Professor of Anatomy and Director of the Biological Department of the University of Pennsylvania, died early on the morning of Thursday, April 30th, of uræmia and pachymeningitis.

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Dr. J. M. DaCosta has resigned the Chair of Practice of Medicine in Jefferson Medical College, which he has held for nineteen years.

Dr. Charles Warrington Earle has been elected adjunct-Professor of Obstetrics and Diseases of Children in the Rush Medical College.

Dr. Hobert Amory Hare has been appointed Professor of Therapeutics in the Jefferson Medical College, Philadelphia, to succeed Dr. Barthalow.

Dr. John M. Dodson has removed his residence to 171 Ashland Boulevard; telephone, 7550. Office, 567 W. Madison street, 2 to 4 P. M.; telephone, 7102.

Two French chemists have succeded in synthetically producing quinine, and the product is said to be identical with the natural alkaloid in every respect.

The National Conference of Charities and Corrections met in Indianapolis last month and arranged for a committee to make an exhibition at the World's Fair.

Dr. Arthur R. Reynolds has removed his residence from the North Side to 4433 Lake avenue. Hours, until 10 A. M., 5 to 6 P. M. At 163 State street, 11 A. M. to 1 P. M. Telephone 2480.

Dr. Norval H. Pierce has returned from Europe and will occupy offices at 210 and 213, the Bay State Building, 70 State street. Hours 11 to 1 and 4 to 5. Residence 103 Pine street.

Dr. William A. Hammond is suing a newspaper correspondent for libel for starting the story that the removal of a wen from the head of Senator Stanford cost the patient five thousand dollars.

The German Congress of Internal Medicine, during its recent meeting at Wiesbaden, unanimously elected Professor Virchow an honorary member, on the occasion of his seventieth birthday.

Dr. H. H. Frothingham announces that he has associated with him Dr. S. C. Plummer, late resident physician of the Cook County Hospital, and changed his office hours as follows: 9 to 10 A. M., 2 to 3 P. M. Sundays, 3 to 4 P. M. at 4304 Lake avenue.

Dr. John B. Hamilton, Surgeon-General of the Marine Hospital service, has been appointed Professor of the Principles of

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Surgery and Surgical Pathology in Rush Medical College. Dr. Walker Wayman, his chief assistant, succeeds to the Surgeon-Generalship.

Dr. WILLIAM PEPPER has offered the University of Pennsylvania fifty thousand dollars toward a permanent endowment fund of two hundred and fifty thousand dollars for the medical department, subject to the condition that an obligatory four-year course be established.

The Illinois State Microscopical Society held its annual meeting May 22d and elected the following officers: Henry L. Tolman, President; D. W. Chapman, First Vice-President; James Hawkins, Second Vice-President; Prof. F. L. Morse, Secretary; and W. H. Summers, Treasurer.

A new medical law has passed the French Chamber of Deputies by which no one shall be allowed to practice medicine in France without a diploma of Doctor of Medicine granted by the government after examinations passed before a state institution of superior medical education.

Dr. JAMES K. EGBERT, of 440 Warren avenue, formerly Assistant County Physician, was married to Miss Blanche Scearce, daughter of Mr. and Mrs. J. N. Scearce, of Danville, Ill., Wednesday, May 27th, at the residence of the bride's parents, 129 North Franklin street, Danville.

It is stated that an extraordinary outbreak of hydrophobia has occurred in the counties of Wexford, Carlow, and Kilkenny, Ireland. Dogs, cows, horses, pigs, and one boy have been bitten. The marked peculiarity is that mania rapidly develops. So far the accounts appear to be inaccurate and exaggerated.

The Association of American Medical Colleges at the annual meeting last month in Washington, D. C., elected N. S. Davis, of Chicago, President; L. McLane Tiffany, of Baltimore, Vice-President; P. O. Hooper, of Little Rock, Second Vice-President; Perry H. Millard, of St. Paul, Secretary and Treasurer.

At the annual meeting of the American Medical Editors at Washington last month Dr. FRANK WOODBURY was elected President; Dr. C. H. HUGHES, Vice-President; Dr. C. C. CULBERTSON, Secretary. At their next meeting they will discuss "The Best Interests of the Medical Journal from a Literary Standpoint."

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A number of associations availed themselves of the meeting of the American Association at Washington to hold their annual gatherings at the same time. Among others the Association of Insane Asylum Superintendents, the American Association of Medical Editors, the American Academy of Medicine, the Rocky Mountain Medical Society, and the National Conference of State Boards of Health.

Dr. J. C. CULBERTSON, of the Cincinnati *Lancet and Clinic*, has been appointed by the Board of Trustees to succeed Dr. John H. Hollister in the editorial control of *The Journal of the American Medical Association.* He brings to the task a reputation for business activity and broad mental grasp. It is sincerely hoped *The Journal* may continue the growth and improvement that has marked it from the first.

The American Medical Temperance Association was organized during the meeting in Washington of the American Medical Association. The new Society is modeled after the British association of similar name. Dr. N. S. Davis, of Chicago, was elected President for the coming year; Dr. R. Quimby, of New Jersey, Vice-President; Dr. T. B. Crothers, of Hartford, Secretary; Dr. George W. Webster, of Chicago, Treasurer.

The Illinois State Medical Society closed a very successful meeting at Springfield May 21st. Dr. Charles C. Hunt, of Dixon, was elected President for the ensuing year; Dr. E. Fletcher Ingals, of Chicago, First Vice-President; Dr. O. B. Will, of Peoria, Second Vice-President; Dr. W. W. Graham, of Chicago, Permanent Secretary; Dr. George N. Kreider, Springfield, Treasurer; Dr. T. G. Hickman, Vandalia, Assistant Secretary. Vandalia was chosen as the next place of meeting.

At Berlin, a corporation ordinance has been adopted which will give to the carriages of physicians the right-of-way through streets that are crowded. In order that these carriages may at once be distinguished from others like them, the coachmen who drive them will don a white hat. This new headgear has been proposed for the prevention of embarrassing delays of medical men in the principal thoroughfares, and will become a recognized demand for the right-of-way at all times.

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The "depopulation" of France and the means of checking the progress of the evil are subjects that have for some time engaged the attention of the Académie de Medecine, but the deliberations of that learned body have not yet led to the discovery of an effectual remedy. In the meantime the President of the Acadèmie, M. Tarnier has taken the highly practical step of offering a bounty of one hundred francs to every married couple in his native commune—Arc sur Ville—who shall enrich the French Republic with an additional citizen during the year 1892.

At the annual meeting of the Chicago Pathological Society, May 10th, '91, Dr. E. H. Root was elected President, Dr. C. D. Wescott Vice-President, Dr. Elmore S. Pettyjohn Secretary and Dr. J. M. Patton Treasurer; Drs. H. M. Thomas, A. J. McIntyre and M. L. Harris, Censors. The Committees on Legislation, Drs. Elmore S. Pettyjohn, C. W. Earle and J. J. M. Angear, reported resolutions, which were unanimously adopted, favoring (first) a modification of the jury commitment of the insane; (second) separate accommodations for all insane criminals; and (third) State supervision of all public and private institutions in which insane persons are cared for and treated.

The Wesley Hospital trustees will begin the erection of a one hundred and fifty thousand dollar hospital without delay. It will occupy the lot at the northeast corner of Dearborn and Twenty-fifth streets, which was owned by the Northwestern University. The hospital trustees have received donations and subscriptions sufficient to pay for the site, and at a meeting held at the First Methodist church sixteen thousand dollars was subscribed toward the building. Plans were adopted, and it was decided to commence the erection of the north wing of the structure as soon as the details of preparation can be attended to. The plans contemplate a building 225x106 feet, five stories high, consisting of three wings connected on the ground by low corridors. An octagonal tower will constitute the striking feature of the administration building on the north wing, and the other wings will rise to steep gable roofs. The Dearborn street fronts will be beautified by bay windows resting on terra cotta brackets and extending to the spring of the roof. Carved gothic arches of brown-stone form the street entrance and first floor

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windows and add much to the beauty of the design. Pressed brick, brownstone, and terra cotta are the materials specified in the exterior construction. Besides the surgical operating, disinfecting, store, medical, bath, and other rooms for the treatment of every manner of disease or injury there will be more than one hundred of smaller size for the accommodation of one hundred and thirty charity and seventy paid patients.

The annual meeting of the Chicago Medico-Legal Society was held at the Grand Pacific Hotel June 6th, and after the routine business the retiring President, Dr. E. J. Doering, read a brief and vigorous address reviewing the work and results of the Society for the past five years, and urging a continuance of its policy in the selection of members and general aims. The Treasurer reported assets to the amount of nearly fifteen hundred dollars, as verified by the Auditing Committee. In the election of officers for the coming year Judge O. H. Horton was unanimously chosen President; Dr. Daniel R. Brower, First Vice-President; Dr. James Burry, Second Vice-President; Dr. Joseph Matteson, Treasurer, and Dr. Archibald Church, Secretary. It was decided to encourage closer relations between the medical and legal professions, and to add a banquet to the next annual meeting.

Lately the daily press has been filled with articles relating to the public hygiene of Chicago, and a laudable effort is being made to place the city in a clean shape by 1893. The disposal of garbage, upon which depends the proper care of alleys, is just now most prominent, and its destruction by incineration appears to be the most available process, though attended by some considerable expense. Its efficiency is undoubted, and would at the same time enable the authorities to dispose of dead animals, an item which now costs twenty-seven thousand five hundred dollars yearly, paid to a rendering company which makes a pretty penny out of the carcasses themselves. In some cities a revenue is derived by the sale of these animal, but here there is only one company, burial is prohibited as a nuisance, incineration has heretofore been impossible, and the company in question has simply dictated terms to the Health Office.

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REPORT OF THE CHICAGO HEALTH OFFICE.

For May, 1891.

Population, 1,900,000.

DEATHS.		DEATHS—Continued.	
Measles	37	Bronchitis	78
Scarlet Fever	39	Capillary Bronchitis	27
Diphtheria	50	Pleurisy	3
Pertussis	29	Congestion of Lungs	6
Typhoid Fever	408	Phthisis Pulmonalis	212
Influenza	23	Violence	109
Pneumonia	259	Suicide	24
Total deaths from all causes			2585
Ratio per thousand of population			25.85
Ratio per thousand of population, May, 1890			16.13

CASES REPORTED.

Diphtheria	72
Scarlet Fever	203

METEOROLOGICAL SUMMARY.

For May, 1891.

MEAN BAROMETER	30.115
Highest Barometer, May 5	30.457
Lowest Barometer, May 31	29.821
MEAN TEMPERATURE	53.4
Highest Temperature, May 9	81
Lowest Temperature, May 4	35
Greatest daily range of Temperature, May 15	30
Least daily range of Temperature, May 22	3
Total deficiency in temperature during month	88
Total excess in temperature since January 1st	112
Prevailing direction of wind	N. E.
Total movement of wind, miles	11,865
Extreme velocity of wind, direction, May 9	51; S.
TOTAL PRECIPITATION.....inches	2.09
Number of days on which .01 inch or more of precipitation fell	7
Number of cloudless days	14
Number of partly cloudy days	10
Number of cloudy days	7

H. C. Frankenfield,
Sergeant U. S. Signal Corps, Chicago, Ill.

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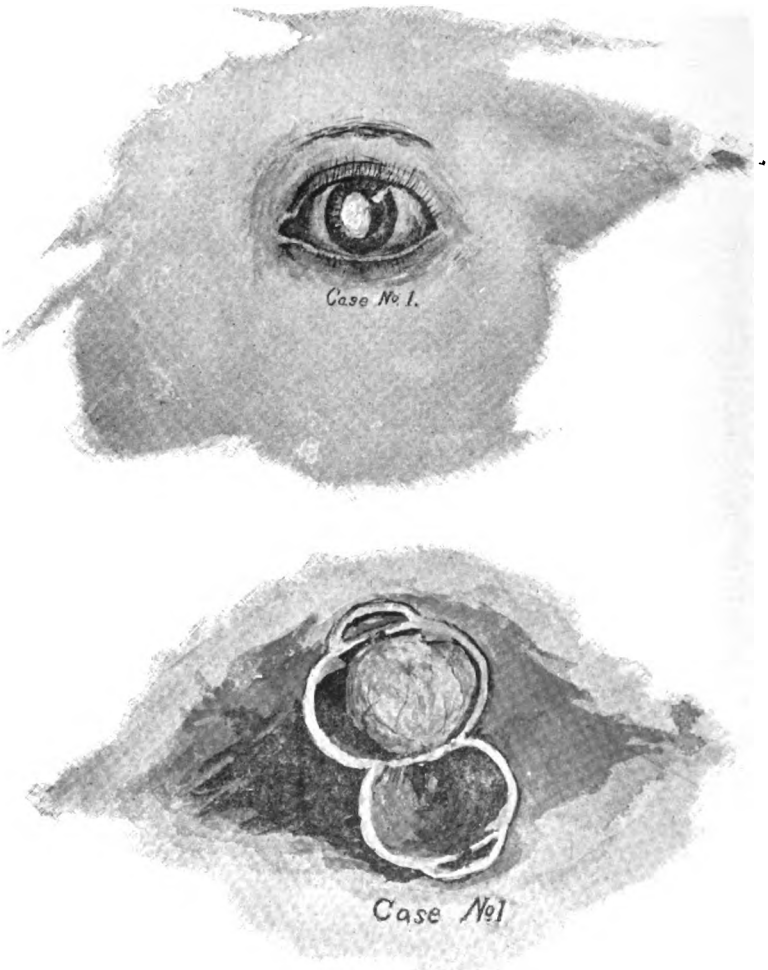

COLBURN --GLIOMA RETINÆ.

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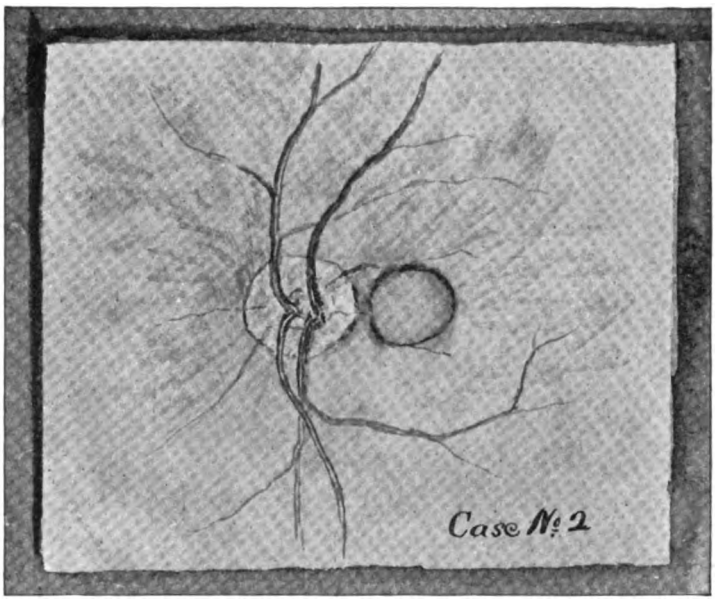

COLBURN- GLIOMA RETINÆ.

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THE

CHICAGO MEDICAL RECORDER.

Journal of the Chicago Medical Society.

DRS. JOHN A. ROBISON, WILLIAM T. THACKERAY, EDMUND J. DOERING,
Committee on Publication.

DR. ARCHIBALD CHURCH,
Editor for the Committee.

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Original Articles.

ADDRESS IN SURGERY.

BY THE LATE PROFESSOR CHARLES T. PARKES.

*Prepared for the Annual Meeting of the Illinois State Medical Society in May, 1891.**

After passing in review nearly the entire field of Surgery from which to select something of interest to present to you, in part payment of the honor conferred upon me by the request to deliver the address in Surgery at this meeting, it has finally seemed advisable to confine the remarks presented to a brief consideration of three subjects, each one of which is of practical importance to every practitioner, and is among the newer ones of the subjects which have of late excited considerable discussion among medical men. Although my personal experience cannot be termed extensive, still it has been quite sufficient to lead me to some positive conclusions upon all of these subjects. The first subject is that of

GALL STONES AND THEIR SURGICAL RELIEF.

No doubt many times patients have gall stones present in the gall bladder for years, or even during their entire life, without

*Published in THE RECORDER in accordance with an expressed wish of the author some weeks before his death, and is his last written professional utterance.

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giving rise to any symptoms. At other times the concretions are forced into the gall ducts, make the transit thereof with the accompanying attacks of biliary colic, enter the intestinal tube, and are discharged with its contents. Again, they reach such large size in their formation as to be unable to travel through the natural bile ducts, become lodged in some portion or other of these ducts and occlude them, or remain in the gall bladder until in either case they finally cause trouble which necessitates their removal. The latter class are the ones which demand surgical interference for cure.

The symptoms and physical signs which indicate occlusion of the excretory ducts of the liver are too familiar to require repetition.

With the usual symptoms well marked, and with the tumor in the normal situation of the gall bladder, the diagnosis will be quite positive. Still, it is a mistake to suppose that a dilated gall bladder will always accompany the symptoms of obstruction of the biliary passages by gall stones. I have subjected several patients to operation with these usual symptoms alone to warrant operative procedure; in these cases the gall bladder was found with great difficulty and the impacted gall stones removed only after serious trouble. In one case I removed four stones from a gall bladder which was dilated to a large size and was unaccompanied with any symptoms of obstruction to the flow of bile; the largest of the four stones had become impacted in the cystic duct and the gall bladder was distended with mucous. There was great difficulty in absolutely differentiating this case of distended gall bladder from a floating kidney, as it was very movable and could be displaced readily and rather widely in all directions. There was one condition under palpation which especially attracted attention and seemed to absolutely establish the diagnosis of distended gall bladder—that consisted in *the impossibility of introducing the fingers between the under surface of the liver and the tumor*, which could have been done easily had it been a floating kidney. Upon abdominal section, the movements of the tumor were proven to be dependent upon the remarkable mobility of the liver itself, the position of which could be changed in any direction by a very light touch of the fingers.

There is no doubt that the presence of gall stones constitutes

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a serious condition for the patient suffering with them, and, if unrelieved, frequently lead to a fatal ending.

It is quite interesting to know the different ways in which nature gets rid of the offending body. Gall stones of large size have been vomited from the stomach, and fatal hemorrhage has followed their ulceration into the stomach; they have frequently ulcerated their way into the small intestine; several cases are on record of fatal obstruction of the intestines being caused by their impaction in their transit through this tube; they have found their way, by ulceration and abscess accumulation, through the abdominal walls in a variety of situations. Each is an argument which seems to impress one with the suffering and dangers associated with either of these occurrences.

Operation for their removal is comparatively simple of execution, and the success attending its application justifies resort to it in all well marked cases. The longer operative interference is postponed, the more certain will be the existence of complications which will increase its percentage of mortality. Repeated attacks of biliary colic undermine the patient's constitutional vigor. Prolonged saturation of the blood and tissues with bile predispose to the occurrence of fatal hemorrhage. Several cases of death are on record from persistent and uncontrollable hemorrhage, either from the wound itself or the cavity of the bladder. Lately my experience has shown just such a case, who for many years had suffered with symptoms of complete obstruction of the biliary passages, retention of bile and enlarged liver. The liver, on exposure, was absolutely black in color, the gall bladder was undistended, and a gall stone of considerable size was found impacted in the common duct and removed. The patient had no unfavorable symptoms until the ninth day, when bleeding commenced from one of the stitch holes, progressed to the entire wound, undermined the skin, separated the abdominal muscles and poured out of the gall bladder itself, finally causing death of the patient from exhaustion. No remedy which we could use seemed to have any effect on it whatever—blood oozed from the surface in all directions like water from a sponge.

It seems unreasonable to suppose that the liver itself can ever return to its normal condition after being for many years saturated with its own secretion.

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The mental hebetude, indifference, moroseness and stolidity displayed in many patients suffering from this trouble, shows the effect of the retention of bile on the nervous system, which is surely likely to diminish the prospects of final recovery, even after operation.

All this is an appeal for an earlier recognition of the cause of the patient's condition and suffering, and the resort to prompt interference for the removal of the offending concretions.

Two operations are practiced: First, Cholecystotomy, which is practically the formation of a temporary biliary fistula and the removal of the concretions from the gall bladder or gall ducts; or the exposure of the gall bladder, opening into its cavity, removal of the gall stones and immediate closure of the wound in the viscus. Second, Cholecystectomy, or the removal of the entire viscus with its contents, forming a pedicle out of the cystic duct.

Special means should be at hand, in both operations, to keep the intestines away from the field of operation, and to prevent leakage into the peritoneal cavity, of the contents of the gall bladder. Attach strong silk threads to six small sea-sponges, to be used for this purpose by packing them around the gall bladder when exposed; the strings are for the purpose of keeping control of the sponges after their introduction and to facilitate their removal.

There should be at hand, and ready for use, an aspirator with which to withdraw the fluid accumulation found in the gall bladder. The best incision for the exposure of the gall bladder is the vertical one, carried from the margin of the costal cartilages on the right side directly over the center of the tumor, if a tumor be present. If no tumor be present, the incision should be made directly downwards from the tip of the ninth rib, and should be at least four inches in length; it should be carried for the same length, by a free use of the knife, through all the tissues of the abdomen until the peritoneum is exposed at the bottom of the wound; all bleeding vessels should be secured in the usual manner before this membrane is opened, then the peritoneum is picked up between dissecting forceps, opened and incised to the full length of the original wound.

The small sponges should now be packed carefully around the exposed gall bladder, pushing the intestines well out of the way,

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and so placed as to catch any leakage from the gall bladder after it is opened.

Cases of retained gall stones, which have existed for a long time and have caused a good deal of distress with disease and distention of the gall bladder, are apt to have pus mingled with the contents, from infection; hence these contents are quite sure to be deleterious and should be prevented from entering the peritoneal cavity.

As soon as the gall bladder is exposed and protected with the sponges, as directed, its fluid contents should be drawn off completely by the aspirator. If it is largely distended with fluid, as soon as the walls become flaccid from aspiration, they should be grasped with forceps on opposite sides of the abdominal incision and the viscus drawn out as far as possible into this opening.

When the aspirator fails to evacuate any more fluid, it is withdrawn and the walls opened between the forceps already grasping the cyst, by means of the knife or scissors; this opening in the gall bladder should have the same direction as the opening in the abdominal walls, and should be extensive enough to admit the finger with ease. The gall stones should now be removed by a pair of dressing forceps or the old-fashioned bullet forceps; it is to be remembered that gall stones are remarkably light and brittle, and if they are to be removed without breakage they must be handled very carefully.

Taking advantage of their lightness, one can succeed in removing a stone that eludes the foreceps, by means of a forcible current of water thrown into the cavity of the bladder from an irrigator; the stone floats on the water and is lifted out of the opening in the overflow.

Biliary calculi are frequently found impacted in Sacculi of the bladder walls, in the cystic duct or in the common duct, and are very troublesome to remove; the tubes, dilated for their passage as they are forced onwards by accumulation and contraction behind them, fall together in their rear so that they may become fixed in their position in the grasp of the bladder or duct walls, by teasing these walls away from them with the pulp of the finger, so that they can be seized with forceps and removed. At other times, they can be crushed *in situ* by being grasped through the abdominal cavity in forceps, which are padded and

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prevented from doing harm to the investing tissues, by drawing sections of rubber tubing over their jaws. Being so very brittle, the application of slight force is sufficient to crush and pulverize them to such an extent that their debris is floated back into the gall bladder and discharged from the external wound; or their destruction having rendered the common duct patulous, this debris is carried back into the duodenum.

After the bladder is emptied of its contents and concretions, the edges of the incision in the bladder walls are sewed to the peritoneum of the abdominal incision by a continuous catgut suture, thus shutting off the cavity of the gall bladder from the cavity of the abdomen.

A large drainage tube, properly perforated, is introduced into the cavity of the gall bladder to allow of the easy exit of the extremely free flow of bile and serum which comes on immediately. The sponges are removed and the abdominal incision closed in the usual manner. A very massive external dressing is required to absorb this discharge.

The sutures in the abdominal walls are removed at the end of a week or ten days; the drainage tube is allowed to remain in the gall bladder until bile has resumed its normal course—indicated by the color of the fæces—or until the amount discharged through it has greatly diminished in quantity.

At the end of two weeks the wound in all its parts will be firmly cicatrized, and if desirable, the tube can be removed. The fistula soon closes if the patulency of the common duct has been restored; if this latter result does not ensue, the fistula becomes a permanent one, but it is of little consequence or annoyance to the patient as compared with the extreme suffering which the operation has relieved.

In some cases in which the common duct is certainly patulous at the time of the operation, after the removal of the foreign bodies, the opening in the gall bladder is immediately closed by inverting its edges and closely approximating its peritoneal surfaces by means of the continuous catgut suture. This method of procedure has been followed by success in some instances, in others the sutures in the gall bladder have given way, allowing bile to be discharged into the peritoneal cavity, causing a fatal peritonitis. The attachment of the bladder walls to the external opening is the safest method to adopt.

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In performing the operation for Cholecystectomy, the technique is exactly the same as that already described for Cholecystotomy as far as the exposure of the gall bladder and the introduction of the sponges for its isolation.

When the operation is advisable, the viscus is usually found much contracted and diminished in size; it is entirely freed by separating it from the under surface of the liver and detaching any adhesions which may be present by means of the finger, the knife or the scissors, until the narrow encysted duct is fully under control; this duct is then tied by throwing a silk ligature around it as far inwards from the gall bladder as possible; the duct is then divided outside of the ligature and the gall bladder is removed.

Some means to disinfect the stump of the divided cystic duct should be used, such as touching it with pure carbolic acid or tincture of iodine, or with the actual cautery.

The sponges are removed and the external incision closed. A strand of iodoform gauze is left in contact with the duct and carried out through the angle of the wound, to act as a drain in case the ligature or duct should give way.

The second subject is that of

EXTRA UTERINE PREGNANCY.

It is quite interesting to note the changes which have occurred in the medical profession, with reference to extra uterine pregnancy during the short period of the twenty-three years that I have been engaged in the practice of medicine.

The first post-mortem examination I ever made was before my graduation, on a lady who had died after an illness of only eight hours. The section disclosed an abdomen filled with blood, with fœtus of three months' development free in the abdominal cavity and a rupture of the left distended fallopian tube. She had been attended by acknowledged masters in the practice of medicine, and although the nature of the difficulty had been recognized and properly diagnosed, nothing practical had been done for her relief.

It would require a careful and prolonged search through the musty leaves of the medical journals of those days, and for many years after, to find a single instance of recovery following surgical interference for the relief of this very common result of con-

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ception. To-day, scarcely any journal published, fails to show reports of these cases subjected to some kind of interference to save the patients from the dangers attending their existence.

The causes which lead to the occurrence of this complication are still matters of doubt, although it seems clear that any pathological conditions of the fallopian tube which interfere with the progress of the ovum to the uterine cavity or tend to produce narrowing of the tube such as will arrest the ovum in its transit to that cavity at different points of the tube, make up one of the elements necessary for the abnormal implantation of the ovum and the subsequent impregnation.

A fact has been established which is beyond doubt, that these pregnancies almost invariably occur in women who have been sterile for a number of years, indicating the presence of pathological changes—probably in the fallopian tubes—which constitute the causes of the abnormal development.

By far the largest number of extra uterine pregnancies are fallopian in their formation and throughout their development. It is certainly questionable whether such cases which seem to be and are reported as being ovarian or abdominal, were not primarily fallopian.

The likelihood of the occurrence of rupture of the distended tube is at all times imminent, but experience has shown that this rupture oftenest occurs between the second and third months of the development of the pregnancy.

The prognosis is always extremely grave without surgical interference; with surgical interference it is astonishingly favorable. The actual place of rupture has an important bearing upon the prognosis, as well perhaps upon the necessity for operative interference. Rupture through any portion of the free surface of the tube into the general abdominal cavity is accompanied always with extreme danger from hemorrhage and its attending collapse. Rupture between the folds of the broad ligament is attended with less hemorrhage; the occurrence of the latter being limited and stopped entirely by clot pressure. In these latter cases, without infection occurring, the effused blood may safely be reabsorbed, the opening in the tube closed by cicatricial formation and the patient cured. Still, even in these cases it is my belief the patient is sooner well and safer from impending dangers

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with an operation that will remove the products of conception together with the results of rupture. In not a few of these latter cases, sometimes termed "safe cases," recurrent hemorrhages place the patient beyond the possibility of recovery with any kind of interference, by causing pernicious ænemia.

Classification. In extra uterine pregnancies, no matter where the seat of implantation occurs, the fœtus may go to full term of gestation the same as if the implantation occurred in the proper uterine cavity. When this happens, irregular pains indicate the onset of a futile labor, after which the child dies and it may remain in its investing tissues for a long period of time, causing greater or less manifestations of trouble. Usually there occurs at once, diminution in the size of the tumor, depending upon the rapid absorption of the liquor amnii. After varying periods of time, the products of conception may be changed into a mass of adepocere, or into a lythopedian, or may be discharged by the suppurative process through the alimentary tract or the uterine passages, or through the abdominal walls.

Diagnosis. The cases of extra uterine pregnancy which are finally to reach near or quite to the full term of gestation seldom give rise to symptoms early in their development which attract the attention of the patient by their difference from the symptoms accompanying ordinary pregnancy. On the other hand, those which fall into the category likely to be accompanied with the occurrence of rupture are apt to show symptoms which early attract the patient's attention and cause her to seek advice from a physician. It is very fortunate for the patient if a diagnosis of the existence of fallopian pregnancy can be made previous to the occurrence of rupture, for no one will deny that the chances of recovery after operative interference are immeasurably increased if such operation can be done previous to the occurrence of the exhaustion and the nervous shock attending the accident of rupture. Certainly a surgeon will be able to appreciate the difference if he is ever called upon to give relief to a patient rendered pulseless, and where every breath seems likely to be her last, in consequence of profuse loss of blood after rupture. Fortunately there are a number of well-marked symptoms and conditions which have been determined as the result of experience, and which positively indicate the existence of this condition.

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First: Most of these patients suffer from unusual pains, irregular in their manifestation, preceding for some weeks the occurrence of rupture and referred to the pelvis. Second: Menstruation is either suppressed or irregular; it usually has ceased for some weeks beyond the usual time for its occurrence, and recurs at an unusual time; the flow, if any occurs, is unusual in amount and differs in character from the normal menstruation. Third: If menstruation occurs toward the end of the second month after its absence, it is accompanied with irregular pains from uterine contractions, and usually followed by the casting off of a decidual membrane in the shape of a perfect cast of the uterine cavity. Fourth: It is common to find evidences of previous sterility, sometimes of many years existence; this fact alone should always awaken suspicion. Fifth: The uterus itself is usually enlarged, the os patulous and the cervix soft. Sixth: The vaginal mucous membrane is violet colored. Seventh: Digital examination, previous to rupture, determines the presence of an elastic tumor of moderate size close to the uterus and inclined to project behind it. Eighth: When rupture occurs, there is added to the history the occurrence of acute, severe, colicky pains in the pelvis, many times accompanied with nausea and prostration to be followed by extreme pallor of the surface, rapid and feeble pulse, and all the other symptoms accompanying any severe loss of blood. Ninth: Vaginal examination and abdominal palpation will frequently determine the presence of fluid and blood clots filling the abdominal and pelvic cavities. Frequently the occurrence of the rupture is in such situation, or the blood vessels torn of such size, that the symptoms of exhaustion from blood lost show such immediate impending danger that the case becomes truly appalling in character. At other times the conservative forces of the system stay for a time the blood loss and give the patient a chance to recuperate for a few days; this improvement only to be followed by recurrent attacks of rupture and loss of blood and exhaustion until the patient dies, unless the surgeon's hand interferes. These are the symptoms sufficiently clear in character to establish the presence of a fallopian pregnancy previous to and at the time of the occurrence of rupture.

Some symptoms which indicate the existence of extra uterine pregnancy approaching the full term of gestation are usually

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quite well marked in these cases; the previous history of sterility has an important bearing upon the final establishment of the diagnosis; a slightly enlarged, otherwise unaltered uterine body is usually to be found, and its cavity is amenable to positive exploration. The presence of the fœtal head in the pelvis, resting against the vaginal walls, with displaced and undilated cervix, the existence of easily palpable parts of the fœtus through the walls of the tumor, are also evidences indicating the abnormal position of the child. Still, a certain diagnosis of such cases is many times surrounded with such great difficulties that the occurrence of a futile labor, with subsequent death of child, will furnish the only positive evidences of the true condition of the patient.

The possible existence of a uterus bi-cornis with a normal pregnancy in one segment of its body with a probably resulting normal labor should always be borne in mind, and if possible differentiated.

Treatment resolves itself into—first: Laparotomy for the purpose of removing the products of the abnormal conception and relieving the effects of rupture at any time after the establishment of extra uterine conception. The technique of the operation will differ according as to whether it is undertaken before rupture occurs, at or near the time of full gestation, or some time after the full term of gestation is past. Second: The use of electricity or other means to destroy the life of the fœtus previous to rupture with the expectation that absorption will dispose of the effects of the abnormal pregnancy. Third: Non-interference after rupture, with the formation of a dense clot leaving nature to dispose of the tumor by absorption. No doubt many cases have been followed by a satisfactory recovery under the third method—that of non-interference, but it seems to me to be accompanied with many dangers—first, that of infection; second, the impossibility of being certain that the hemorrhage will not recur with its accompanying increase of danger should an operation be necessitated, and the added difficulties to the operation should one be undertaken.

The risk of a laparotomy, carefully executed under the existing surgical manipulations, is less than that of the possibilities which may follow non-interference.

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Quite a number of surgeons, many whose position entitles them to speak authoritatively, believe in the good results following the use of electricity or other means to destroy the vitality of the fœtus previous to the occurrence of rupture. The results of the conception are left as a possible menace to the life of the patient. Still, the experience of these gentlemen seems to prove that these remains are usually safely removed and the patient restored to health.

My experience, so far, has not shown me a single case in which the diagnosis of extra uterine pregnancy has been made previous to rupture, early in the development of this abnormal condition, so I have not been called upon personally to decide as to the propriety of their use.

It is my belief that it is best to consider a case of extra uterine pregnancy, at any period of its development, in the same light as that of a dangerous tumor, and the best treatment to adopt is entire removal of the products of conception by laparotomy in anticipation of hazardous complications or accidents threatening the life of the patient.

Cases of extra uterine pregnancy before term, with or without rupture, are often referred to the surgeon for operation; the special manipulations necessary for their successful management, demand of the surgeon well-defined plans of procedure, in order that these may at any moment be put into rapid execution. The surgeon will never be confronted with operations calling for greater skill, promptness and readiness of action than the one which he must face when asked to relieve and surmount the imminent danger of immediate death attending many cases of ruptured fallopian pregnancy.

Careful diagnosis having established the existence of an unruptured tubal pregnancy, the operative procedures for its removal present no complications. The abdominal incision, exposure of the tumor, ligation of its base and its excision are to be made with the same precautions and with the observance of the same rules as are necessary to accomplish the removal of any small tumor implicating the uterine appendages.

When the rupture has occurred on the free surface of the tube and the blood is rapidly flowing into the abdominal cavity, as indicated by the well-defined symptoms always present in such an

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occurrence, every maneuver of the surgeon must be executed with great rapidity as well as with great certainty.

The abdominal opening is made quickly, and as soon as the peritoneal cavity is exposed, the uterine end of the distended fallopian tube is immediately seized with the fingers and included in a ligature passed under it by means of a curved needle, and securely tied. The tissues of the broad ligament towards the free end of the fallopian tube are then secured by a ligature applied in the same way; these ligatures stop the bleeding at once and thus get rid of the main element of danger. After this the mass of effused blood can be cleaned out of the way and the ruptured tube, with or without the fœtus, removed with deliberation and safety.

The peritoneal cavity is thoroughly cleaned and the opening in the abdominal walls closed in the usual manner. No drainage is to be used if its use can be avoided; if much uncontrollable oozing of blood is present, the Mickulicz gauze drain should be introduced; its pressure will stop the oozing and its presence provide for drainage; it can usually be removed safely by the third day.

In bad cases the terrible effects of the great blood loss can be in part relieved by the injection of large quantities of a solution of common salt, in the proportion of one teaspoonful of salt to a quart of sterilized water, into the cellular tissues of the back, or less quantities into some easily exposed vein.

The abdominal incision is usually best made in the mid-line, as giving more certain control of the fallopian tubes when the diagnosis of which tube is the seat of pregnancy, has not been made. I made the lateral incision in one successful case, directly over the most prominent part of the swelling, and the necessary manipulations were readily carried out through it.

More deliberation can be practiced in the cases of rupture into the broad ligament, as the loss of blood is not an element of so much concern.

In another case of this variety of rupture, the following plan of manipulation was practiced: After opening the abdomen, cleaning out much loose blood from the cavity and exposing the tumor, an incision was carried through the broad ligament investing the top of the tumor, from the uterus to the lateral brim of

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the pelvis, its course running parallel with that of the fallopian tube; the fingers were introduced into this incision and the entire mass of blood clot enucleated from its bed between the folds of the broad ligament. No blood vessels required ligation. As there was some oozing of blood into the cavity left, that cavity was packed with strips of iodoform gauze, the ends of which were drawn out of the lower end of the abdominal incision and this incision closed by interrupted suture. The gauze packing was removed on the third day and the case went on to rapid recovery.

Other cases of rupture into the broad ligament are best managed by the application of a ligature at both ends of the tube, and a removal of the diseased portion of the tube, together with all blood clots, in the manner already described for the control of cases of rupture on the free surface of the tube. Many cases of successful termination, after operation for ruptured extra uterine pregnancy, have been reported.

Extra Uterine Pregnancy, Near, At, or After Term:

After safely passing through the extreme dangers attending rupture in the earlier months of its development, an extra uterine pregnancy may remain present in the patient so affected with symptoms of greater or less trouble for remarkably long periods of time, even for many years, after the child has reached full term and died. Complications of one kind or another during any time of its existence may happen to require surgical operation. The most certain necessity for such interference will follow as the result of pus infection of the fœtal sac or its contents.

After full term of development, probably the most favorable time for operation in the majority of cases will be about the third month after the child has reached full term and its death occurred, accompanied with well-marked symptoms of futile labor, and been followed by diminution in the size of the tumor from absorption of the amniotic fluid.

Probably as well, at the end of the same period, partial separation of the placenta will have occurred, or its blood vessels have become so much contracted in size as to diminish or obviate entirely one of the greatest dangers attending operations in these cases: that is, primary or secondary hemorrhage following separation of the placenta. Aside from hemorrhage the largest fatality has attended the operation in former years from septic peri-

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tonitis, which complication can be almost certainly avoided by carrying out in detail aseptic and antiseptic precautions and procedures before, during, and after the operation.

Operative procedures may be divided very properly into the "minor" and "major," the latter having for its object the removal of the entire sac and its contents; the former accomplishing merely the removal of the fœtus and the attachment of the edges of the opening into the fœtal sac to the margins of the abdominal incision, accompanied either with the removal of the placenta at the time of the operation, or the adoption of the plan of allowing it to remain for the gradual separation which follows contraction of the sac and its absorption.

The type of extra uterine pregnancy, whether it be fallopian or intra-ligamentous, exercises much influence upon the choice of the operation to be performed. It is scarcely probable that this condition can be accurately estimated previous to making the abdominal incision. If, after the abdomen is opened, the tumor is found to be free from adhesions and pedunculated, as may be the case in the fallopian or ovarian type, the "major" operation is the best one to adopt; the pedicle, if one is present, is ligated as for any tumor and the mass removed; or if none be present, a pedicle is formed of the investing tissues by partial enucleation and treated as already described, in controlling the pedicle and during the subsequent details incidental to the care of the case. If no pedicle is present, and it is impossible to form one, or if the adhesions are insurmountable or the case is of the intra-ligamentous type, it is best to perform the "minor" operation, which consists in fastening the surface of the fœtal tumor into the abdominal incision by a continuous catgut suture. As soon as this is accomplished and isolation from the peritoneal cavity made perfect, the fœtal sac is opened by a free incision and the child delivered through it.

If the placenta is to be delivered at once, the blood vessels leading into it should be ligated by means of deeply applied silk sutures before any attempt is made at its separation. Otherwise the cavity of the fœtal sac is best packed with iodoform gauze and kept free from septic infection until the contraction of the sac has separated the placenta and cast it loose.

Both in the intra-ligamentous and other varieties, the anter-

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ior surface of the fœtal sac is sometimes blended intimately with the abdominal walls by adhesions so that they are practically continuous tissues. If this condition is present, no attempt is made to separate these adhesions, but the incision through the abdominal walls is carried directly into the cavity of the fœtal sac; the child is delivered, the cavity filled with iodoform gauze and the separation of the placenta awaited. In all cases in which the cavity is filled with the gauze, this material is withdrawn and replaced often enough to secure an aseptic condition of the cavity. As soon as the placenta is entirely detached and removed the sac contracts and granulates rapidly and the case goes on uninterruptedly to complete recovery.

Many times by anticipating, by a few days, the futile labor which marks the full term of development in the child, or by selecting the time of this occurrence itself, operative interference will be rewarded with the delivery of a living child. In these cases the danger from primary hemorrhage, attending any attempt to separate the placenta, should lead to the avoidance of any active interference to accomplish this result. It is best to practice delay in the separation of the placenta and to make use of the gauze packing, unless a pedicle can be formed and the entire sac removed.

The conclusions just stated are based upon the experience resulting from the care and treatment of ten cases of ruptured fallopian pregnancy occurring from the second to the fourth month of the abnormal conception. These were all subjected to laparotomy, and all recovered without trouble of any kind, except the tenth. This last and only fatal case gave a clear history of having passed through three attacks of recurring rupture and hemorrhage, and was so extremely prostrated after the third attack, when the operation was undertaken, that this condition of exhaustion precipitated the fatal issue.

The experience also includes one case of Lithopedion successfully delivered through an opening in the posterior wall of the uterus—the specimen of which is here presented. Also one case of laparotomy for extra uterine pregnancy three months beyond the period of gestation, the specimen of which is here shown.

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Operative Treatment of Goitre.

The third subject for consideration is that of enlargement of the Thyroid gland—Bronchocele, Goitre, or Strumapriva. Judging from the frequency with which patients suffering from this trouble come to me for relief, I am led to the conclusion that the diseases of this gland are becoming more common in this country. It is rather a popular idea, even in the profession, that this affection is rather sharply confined to mountainous regions and among people who are compelled to use water in which the lime salts are over-abundant.

There is some hesitancy in making positive assertions about the physiological function of the gland, still experience has taught us that its absence or the destruction of its function by disease, leads to the accumulation in the connective tissue of the body, of the substance termed mucin, so that we are led to conclude that its function has some direct control over the formation, distribution, or elimination of that substance.

It may be possible that heredity has some influence in leading to the occurrence of enlargements of this gland. Two instances have come under my observation during the past winter, which furnish testimony in favor of this supposition. One, a young girl fifteen years of age, gave the family history that her mother and one sister had both been affected in early life with enlargement of the thyroid gland. They lived in London, England. Both were cured by the administration of medicine and the external application of an ointment after several months' treatment. The present patient showed a very large growth of the thyroid body, affecting all portions of the organ: smooth, even, and elastic to the touch in all its parts; it was diagnosed as a case of simple hypertrophy, and is rapidly disappearing under the use of injections of five per cent. solution of carbolic acid into its substance.

The second case was a German woman, thirty-five years of age, who gave the following interesting items of family history: Her father and one sister had both died from suffocation produced by very large goitres; the patient herself had extensive enlargement of the right lobe and isthmus, very hard and nodular to the touch. Extirpation was advised but not submitted to. These cases lived in different parts of the world, their immediate

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surroundings were non-mountainous; both families removed to this country and settled in a prairie country, yet the children of both families showed degeneration of this gland.

It is interesting to know that many instances are on record, showing the presence of adventitious thyroid tissue in different portions of the neck, entirely disconnected with the thyroid body. It is also interesting, and may be useful, to know that the transplantation of masses of thyroid tissue under aseptic precautions, have been successfully performed from one body to another, and from the lower animals to man. Especially is the latter experiment of interest, if we come to believe that total extirpation of the thyroid gland is always followed by struma-priva cachexia, for the adoption of transplantation of thyroid tissue may possibly prevent this occurrence.

Accumulation of a superabundance of mucin in the tissues of the body seems to be associated with a peculiar influence upon those tissues and especially upon the nerve centers, leading to the occurrence of the disease termed mixodœma, and the establishment of cretinism or cachexia struma priva. In mixœdema the connective tissue spaces of the body are distended by mucin, producing unsightly swellings and deformities of the extremities and face, associated with pallor, extreme general debility, malaise and exhaustion. The mind becomes heavy and dull and the patient is indifferent, indolent, and gradually complete imbecility ensues.

The classification of the diseases leading to the enlargement of the thyroid body are based principally upon its anatomical construction and upon the determination as to which of these anatomical elements are primarily the seat of the changes present in any case.

1. Hypertrophy or adenoid development consists of a true increase of the normal elements of the gland tissue.

2. Colloid degeneration indicates formation and accumulation of colloid material in the proper follicles of the gland, leading to the production of nodules of various size and in immense numbers throughout the gland, encased in hypertrophied layers of the fibrous stroma.

3. Single or multiple formations of cysts, produced by the filling and distention of the follicles with serous fluid, sometimes of great size, constitute cystic degeneration.

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Some cases disclose hyperplastic development affecting the stroma of the gland, leading to the formation of fibrous goitre. Disease confined to the blood vessels of the thyroid body increasing their lumen, frequently associated with abnormal pulsation of the blood vessels of the neck and unsightly protrusion of the eyeballs, constitutes the variety of disease termed aneurismic or exophthalmic goitre.

Occasionally, calcareous formations occur in the degenerated tissue, producing tumors of stony hardness. Sarcomatous and carcinomatous degeneration of the gland are also met with.

Simple hypertrophy or adenoid development usually affects all portions of the gland at once, producing uniform and smooth enlargement of both lobes and isthmus. It is met oftenest at the age of puberty, and especially in young girls at the time or subsequent to the establishment of menstruation. In some cases there is a manifest increase in size at each menstrual epoch, still it may occur at any age in either sex. By some this variety is supposed to have a miasmatic origin, and its existence to be self limited.

The exophthalmic or aneurismal variety never reaches an excessive size and it usually affects equally all portions of the thyroid body. The other varieties are less likely to be symmetrical in their development, and the disease may be confined to either lobe or to the isthmus alone. They are irregular and uneven of surface, nodular and sometimes extremely hard. They not infrequently grow to an immense size and have outgrowths from them projecting into the mediastinum behind the sternum. I have with me here these specimens of total extirpation which show very perfectly many of the characteristics briefly referred to, which I will pass around for your inspection.

It is hardly possible that any difficulty will attend the diagnosis of enlargement of the thyroid gland under any of the conditions mentioned. The situation of the body—its peculiar shape—the effects of the movements of deglutition upon it, no matter what its size or shape—the always present displacement of the main blood vessels of the neck—and the retention of the manifestations of the disease within the proper capsule of the gland, make up an array of symptoms which prevent any possibility of a mistake in diagnosis.

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Enlargement of the thyroid body, from any cause, always produces an unsightly deformity and is a source of great annoyance to the sufferer on this account alone. Simple hypertrophy seldom produces any other symptom, even when the disease has reached quite a large size. The cystic and fibrous and especially the colloid varieties are quite commonly accompanied with serious symptoms which demand the adoption of methods of relief. These principally concern respiration, and are the result of compression of the trachea leading to the diminution of its lumen, and occasionally to absorption of its cartilagenous rings. This pathological condition of the trachea, resulting from pressure of the growth, should always be borne in mind during operations for extirpation of the gland in order to avoid complete collapse of the tube during the manipulations of the operator.

For the purpose of treatment, the growths of the thyroid body may be placed in two classes. First: Those which will require complete or partial extirpation of the gland for their relief. Second: Those which can be caused to disappear by the administration and external application of certain medicinal agents, or the injection of certain medicines into the substance of the tumor. Under the latter class will fall all cases of simple hypertrophy, and many cases of purely cystic degeneration.

Exophthalmic and pulsatile goitre are certainly benefited by the use of electricity, general tonics, iodine, iodide of potash, and especially arsenic. The use of five drop doses of the Tr. of Strophanthus, the effect of which is carefully watched, is frequently followed by benefit in this variety of goitre. If we can believe the testimony of a large number of practitioners, all varieties of enlargement have been occasionally caused to disappear by the use of potassium iodide internally, and the external application of ointments containing the bin iodide of mercury. In my experience many cases of simple hypertrophy and also cystic formations, even of large size, have been immediately and sometimes rapidly cured by the use of injections of a solution of carbolic acid; the strength of the solution is five per cent.; it is introduced directly into the substance of the lobes of the gland, either one or both, by means of a hypodermic syringe; from one to two drachms of the solution is used each time. The injections are made at intervals of one week. After an experience of cer-

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tainly a thousand injections, there has not occurred one instance of any inconvenience whatever therefrom. This is the plan adopted in treating cases of simple hypertrophy; it has certainly been satisfactory to the patients upon whom it has been tried, and hence its effect has been entirely satisfactory to me.

Whether or not these cases, if left to themselves, will sooner or later disappear, may be a matter for discussion; to me the results of the use of this remedy in these cases, has been so constant and positive, that I am thoroughly convinced of its beneficial influence.

The treatment of the cystic variety is to adopt the following plan: The contents of the cyst are aspirated and the cavity of the cyst injected with two drachms of a five per cent. solution of carbolic acid; this procedure is repeated at intervals of one week. Several cases so treated have been permanently cured.

The fact remains that many cases of the colloid, fibrous, cystic, and calcareous degeneration of the gland, will not respond satisfactorily to the administration, injection or external application of medicines, and when the symptoms in these cases are persistent and urgent in character, they must be subjected to total or partial extirpation.

The safety of extirpation demands from the surgeon attempting these operations a perfect knowledge of the surgical anatomy of the gland. No surgeon is justified in undertaking such a serious operation governed alone by haphazard notions of general surgical procedures; he must acquire a special knowledge of the normal anatomy of the organ as well as a specific recognition of the changes induced therein by the growth. Especially is it necessary to remember the alteration in all the veins, which are enormously increased in size and their walls extremely thin and brittle.

The dangers attending the operation are extremely formidable in character—sudden death may take place at any time during any stage of its performance unless these sources of danger are thoroughly recognized and properly avoided. With this recognition the operation can under all circumstances be safely and easily executed, and the patient as certainly recover as from any other capital operation.

The main difficulties attending the operation are, first, excessive

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loss of blood; second, entrance of air into the enlarged valveless veins; third, complete collapse of the trachea; fourth, division of the recurrent laryngeal nerve; fifth, sepsis. It is truly appalling to read of the many cases of death on the table from loss of blood among the earlier attempts of surgeons to make a complete extirpation of the enlarged thyroid gland. This result followed as the consequence of a supposed necessity for rapidity of operation and the absence of the application of well-defined methods for securing the large blood vessels, and is an accident which as a rule is entirely unnecessary in its happening, and one which can and must be avoided.

In the operation for complete extirpation of a goitre, after the skin is divided and the tumor exposed to view, no vessel, vein or artery should be severed until its walls are secured either permanently by the application of two ligatures or temporarily by the use of two forceps and the division of the vessel made between them. By the adoption of this plan, carried out regularly and slowly, the largest gland can be entirely enucleated without the loss of more than a few drachms of blood. The blood vessels should be finally and permanently secured with properly prepared catgut. It is well to seek early in the operation for the supplying thyroid arteries, which should be ligated in two places and divided between these ligatures.

The application of a permanent ligature to every vein met with before its division, absolutely avoids the occurrence of air embolism with its result of almost sure death.

The necessity of remembering the effect of the pressure of the growth upon the tracheal walls has already been mentioned, hence, the operator must carefully avoid any manipulation of the gland which may lead to the occlusion of the lumen of this tube at its weakened point. Such extensive destruction of the cartilaginous rings sometimes occurs that the attachment of the gland is the only force which keeps the tracheal walls apart, so that they instantly collapse at the weakened point as soon as the tumor is removed. To meet the consequences of this accident, the surgeon should always have at hand before commencing the operation, a No. 12 English catheter, or other proper tube, which can be introduced through the mouth into the trachea to a position below the site of the collapsed portion and through which breath-

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ing can be carried on. If this does not accomplish the desired result, or the catheter is not at hand, the trachea must be opened at once below the area of the constriction.

The uncovering and separation of the lower portion of the tumor must be executed with great care in order to avoid injury to the recurrent laryngeal nerve; the division of both nerves would probably lead to instant death from paralysis and collapse of the glottis; partial injury to either or both is followed by permanent impairment of the voice and difficulty of breathing.

The situation of the nerve is easily remembered because it always runs in the groove between the œsophagus and trachea to its point of entrance at the extreme lower border of the larynx.

The ligation of the inferior thyroid artery should be made at the point at which it turns inward to the larynx from its vertical course, and as this point is fully half an inch away from the nerve, its choice for the application of the ligature avoids danger of inclusion of the nerve. The nerve itself should be under actual inspection during the manipulations for the detachment of the growth in this position.

So many large inter-cellular spaces are opened during the division of the attachments of the growth, that great care and cleanliness must be practiced in order to escape infection of the wound. Suppuration occurring in these wounds is quite sure to burrow in the loose tissue, or extend by infection of contiguity into the cellular spaces of the media stinum—a complication which greatly enhances the danger of the patient by absolutely preventing the possibility of perfect drainage.

There is always a large flow of serum from the surface of the extensive wound, hence it is necessary to adopt efficient drainage. With enlargement of the entire gland, the best incision is the curved one having its convexity downwards. Occasionally the single oblique incision along the anterior border of the sterno-mastoid muscle gives sufficient space for the easy removal of the enlargement of one lobe. It is poor judgment to make either one of them other than very free. The extent of the external incision is of no consequence compared with the difficulties and even danger attending operative manipulations in a confined space.

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Partial removal signifies opening of the capsule and the enucleation of the diseased tissue. This method is particularly applicable to the relief of cystic and colloid degeneration of the gland. After the tumor is thoroughly uncovered, it is drawn well through the external wound and its base surrounded by a slender rubber cord fastened sufficiently tight to control the flow of blood. The capsule is then opened and the cyst or colloid nodules are dissected out or removed with the scoop. The resulting cavity is firmly packed with iodoform gauze, after which the rubber cord is removed and the gland returned to its normal position. This packing controls all hemorrhage; the gauze is gradually removed, and the cavity allowed to fill by granulations. Or the cavity left after enucleation, is seared with the actual cautery to restrain hemorrhage and to do away with the necessity of packing. After either operation, a large, soft, absorbing external dressing is required and the patient advised not to walk, and to swallow as little as possible, for the first few days after the operation in order to keep the wounded surfaces as free from motion as possible.

Other surgical procedures have been adopted much less extensive in character than these described, for the purpose of curing goitre. They have not been attended with satisfactory results, hence, I shall not speak of them in detail. Perhaps one of them, that of exposure and ligation of the isthmus at its point of junction with the lateral lobes with subsequent complete division of the isthmus, between the ligatures, with knife or cautery, is entitled to particular mention. In some instances the practice of the method is said to have been followed by the gradual subsidence of the enlargement of the lobes, and under all circumstances, it is said to give relief to the symptoms of interference with the patient's breathing.

My experience embraces six cases of total extirpation of the diseased gland. Suppuration was absent in every case; all the patients were practically well inside of two weeks and have remained entirely well since the operation. One case only, showed any evidences of cachexia sturmapriva, but in that case these symptoms were present before the operation, At the present writing, over a year since the operation, these special symptoms have disappeared.

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GLIOMA RETINÆ.

By J. ELLIOTT COLBURN, M.D.
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Malignant tumors of the eye are not of frequent occurrence, therefore a report of the following cases of glioma, and a brief reference to some of the difficulties arising in differential diagnosis may be of interest. It is rare to see a case in the earliest stage, unless the patient be undergoing examination for some concomitant ailment, and thus an accidental discovery of the glioma be made; for there may be no history of any particular disturbance of the eye.

The first local indications of the disease are the staring, wide-open appearance of the eye, the dilated pupil, and on close inspection, the presentation of a bright yellow or whitish mass occupying a more or less central position in the pupillary field. Further examination will disclose more or less increase of ocular tension and not uncommonly slight dullness of the cornea. Later the tension is great, the eye congested, and a pink sclero-corneal zone is strongly marked. The tumor presses upon the iris and lens, displacing both, and filling the pupillary field. Through the dull cornea you will be able to notice that changes have taken place in the contour of the tumor, it having become more vascular and less symmetrical than formerly; and finally, if the eye is not enucleated, the cornea will become roughened and soon ulcerate, the eye discharging. The mass increases in size quite rapidly, and proliferating, evicts a most offensive pus, the orbital structures become involved, and extension to the brain, or exhaustion, soon terminates the case in death. It is not until the cornea becomes involved that there is much manifestation of pain.

The conditions with which malignant tumors of the interior of the eye may be confounded, are: (1) Detachment of the retina; (2) Persistent hyaloid artery; (3) Partial dislocation of an opaque lens; (4) Hemorrhage with or without detachment of the retina; (5) Lymph deposits posterior to the lens; (6) Lymph and tuberculous deposits.

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It would seem, from a review of the experience of the various observers, that a small percentage of all the cases operated are happily terminated by non-recurrence. There is a direct relationship existing between an early operation and the percentage of recoveries. A hopeful prognosis, therefore, will depend entirely on an early diagnosis and decisive action. Free *enucleation must* be the immediate procedure, carefully exploring the cavity of the orbit for any nodules or evidence of an extension of the disease to the optic nerve or the tissue of the orbit.

Glioma retinæ is essentially a disease of early childhood. It may appear as a small tumor situated in any part of the retina, pressing forward and encroaching on the cavity of the vitreous. Secondary masses may arise in more or less widely separated localities, or they may develop about the primary tumor. It is a malignant growth and histologically resembles a round-cell sarcoma, having its origin in the neuroglia or supporting tissue of the retina. It is composed of granular round cells, with large spherical nuclei, pressed one against the other and cemented together by a small quantity of inter-cellular snbstance.

Other cellular structures may be present and the large cell tumors are extremely vascular. The growth invades any tissue of the eye or orbit and destroys it with great rapidity. In rare cases it may attack eye, orbital, and brain tissues simultaneously, or it may extend to the brain through the optic nerve or the structures of the orbit. At times the growth may seem to be arrested in its development and undergo degenerative changes.

Case No. 1. C. M., age four months; six weeks after birth mother noticed the eyes presented strange appearance. Child was brought for examination to the Illinois State Charitable Eye and Ear Infirmary in May, 1884. The tumor was plainly visible without the aid of extra illumination. It completely filled the cavity of the vitreous, pressing the iris well forward and rendering the anterior chamber very shallow. There was no appearance of change in the iris, cornea or conjunctiva. The tumor obtruded forward as a yellowish, rather brilliant mass. Family history: Father had syphilis, had tumor pronounced and epithelioma removed from his face. A paternal uncle died of hepatic carcinoma. The mother was forty-eight years of age at birth of

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child. The eye was enucleated at once and our diagnosis of glioma retinæ confirmed by microscopic examination. The parents were warned as to the danger of recurrence, and requested to return with the child once in two or three months. Up to May, 1880, no recurrence. (Vide plate, Case 1.)

Case. 2 C. E., age three years. In September, 1886, was presented at the Eye and Ear Infirmary. I found a phlyctenular conjunctivitis. Eight weeks later, in a subsequent examination, I marked the left eye's indifference to the approach of my hand. In the dark room I discovered a small tumor just to the right of macula. Family history negative; diagnosis, glioma. The mother consented to an immediate enucleation. Microscopic investigation confirmed the diagnosis. September 10th, 1888, the child was returned and the stump found in good condition and an artificial eye placed.

Case No. 3. Mary H., aged six years. May, 1887, lost left eye from keratitis at three years of age. There seemed to have been a pan-ophthalmitis. Right eye dull and lustreless, pupil dilated, and capsule of lens marked by former synechia. With aid of the ophthalmoscope found small tumor at the disk, the retinal blood-vessels coming from beneath; there was no present evidence of inflammatory action. (Vide plate, Case 2.) Advised an immediate enucleation; friends asked time for reflection; did not return for two weeks, then an increase in size of tumor with some protrusion of eye-ball. The eye was enucleated and nerve severed as far back as was possible. Two small nodules were found upon the nerve about five milligrammes from the ball. Family history unobtainable, as the mother died shortly after the birth of child and father was unknown.

With microscope found numberless spindle-shaped cells, as well as the round cells of the glioma proper. In some of the soft mass, there were great numbers of pigment cells. The cavity did not heal, but at once began to extrude proliferating material. Tumor was evidently of a mixed variety. The child died during the following July with symptoms of meningitis.

Case No. 4. John C. C., aged eight months, presented for examination at the Clinic, with a large tumor filling the right orbit.

At six months of age, the child was found by the mother to

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be blind and that there were yellow spots in each eye. Family physician examined child and pronounced it double cataract and suggested an operation to restore sight as soon as convenient. Two months later parents, observing change going on, again consulted the physician, whereupon he wrote to me for advice. The antechamber at this time was nearly obliterated and there were evidences of inflammation of the anterior structure of the eyeball. I ventured a diagnosis and a grave prognosis. The parents brought the child to me, and I found even a greater progression of disease than I had anticipated: there was unmistakable evidence of infection of the orbital cavity and beginning cerebral disturbance, so that I could not advise an operation.

Case No. 5. Was similar to the preceding one, except that the brain symptoms were developed before the tumor had altered the shape of the eyeball. The physician in attendance at the time of my examination suspected that the brain symptoms were due to ear disease, as there had been a chronic discharge from that organ for some months, and that the blindness was due to cataract. The child had spasms and died after a protracted coma, the glioma retinæ having developed rapidly.

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THE EFFECTS OF INFLUENZA ON THE AIR PASSAGES.

By E. FLETCHER INGALS,

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Read before the Chicago Medical Society June 1st, 1891.

The epidemic of influenza which has prevailed in this city during the past winter and the year preceding have not differed materially from each other in their effects upon the mucous membranes of the respiratory passages, though there appears to have been some difference in the type of pneumonia, that of a year ago being more commonly of a catarrhal character, or broncho-pneumonia, and that of the past winter more frequently than in the former epidemic being of a croupous character.

From my own observation I would conclude that during the past winter the tendency to the development of inflammations of the pleura has been much more pronounced than during the preceding winter. For four or five weeks preceding the actual beginning of the epidemic many patients suffered from acute rhinitis and sore throat which were often termed influenza, though they did not appear different nor much more frequent than the colds which are prevalent in ordinary years. However, during this same time here and there occurred cases presenting the peculiar symptoms of sudden fever, malaise, great prostration and aching of the muscles which have been so prevalent during the two epidemics through which we have just passed. These isolated cases presented all the appearance of influenza, and doubtless they were of that nature, and it is probable that the peculiar condition causing these had more or less to do with some of the cases of acute rhinitis or sore throat just referred to. As the character of the disease became more pronounced its accession was usually marked by a mild degree of inflammation of the conjunctivæ, Schneiderian mucous membrane and the fauces, characterized by running of the eyes, profuse watery discharge from the nares, swelling of the turbinated bodies and

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more or less congestion of the mucous membrane of the nasal cavities, with more marked congestion and soreness in the fauces. However, the inflammation in any of these localities has usually been comparatively slight, and much less than is ordinarily anticipated in influenza, indeed, even less than frequently attends ordinary acute colds.

In such cases, in the course of thirty-six to forty-eight hours the disease has generally progressed to the larynx, where it is characterized by hoarseness and a hacking, annoying cough. After three or four days all evidences of the attack have frequently subsided. This, in my experience, has been the most frequent type of influenza during the past two years. Next in frequency is one in which the trachea has been chiefly involved, and, indeed, this has seemed to me the most frequent of all where the patient has been sick enough to consult a physician. The tracheitis which we have witnessed in influenza has either been preceded by rhinitis, pharyngitis and laryngitis, or may have been developed soon after the first symptoms of the attack appeared without the intervention of inflammation in the upper air passages. It has usually been attended with a most persistent tickling sensation in the trachea, provocative of frequent spasmodic coughs, which, after thirty-six to forty-eight hours, have usually been attended with free expectoration. After four or five days the sputum frequently became of a thick, muco-purulent character, and often quite offensive to the patient. Such attacks, as a rule, have not been so rapidly recovered from as those of the upper portions of the air tract, but have frequently extended over three or four weeks, and not uncommonly one or two months have elapsed before the cough has entirely subsided. Even then, on the occurrence of the slightest cold the patient has frequently complained of the same tickling sensation in the throat and irritating cough.

Simple bronchitis, characterized by frequent spasmodic cough and more or less profuse expectoration, has been observed in a considerable number of cases, usually associated with one or other of the affections already mentioned, but occasionally independent of these. This bronchitis, when uncomplicated, has not as a rule been so obstinate as the tracheitis, though in some instances convalescence has been delayed for several weeks.

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Unfortunately, in a considerable number of cases the inflammation has extended through the capillary bronchial tubes and true catarrhal pneumonia has been developed, which has frequently proved a most serious complication, and in not a few instances a fatal malady.

I think that during both the past winter and the winter preceding the majority of cases of pneumonia growing out of influenza have been of this type; but it has seemed to me that more were of this type a year ago than during the past winter when croupous pneumonia, resulting from the epidemic influence, has been peculiarly prevalent. This latter has usually run very much the course of ordinary croupous pneumonia, excepting that the patient has generally been more prostrated, and convalescence has been longer delayed. In many instances pleurisy has also been developed during the attacks of influenza, and it seems to have been peculiarly liable to eventuate in suppuration. Pleuropneumonia has also been especially frequent and uncommonly disastrous.

The essential points in the diagnosis of influenza of the respiratory organs as we have observed it are: Sudden accession of the fever with headache and excessive aching of the back and limbs, the peculiar prostration, and the symptoms and signs of inflammation of the mucous membranes.

This must be distinguished from ordinary inflammatory affections of the respiratory mucous membranes by the history and physical examination. Acute follicular tonsilitis very often gives almost precisely the same symptoms as influenza and can only be distinguished from the latter by an examination of the throat. In most instances of laryngitis, tracheitis or bronchitis the epidemic nature of the disease could only be distinguished by its history and by the excessive fever and unusual pains which attended the attack of influenza.

The prognosis has always been considered so favorable that the laity and even physicians at first considered it a laughing matter to have influenza; indeed the majority of cases recover after a short time, but many have learned to their sorrow that some cases do not run this favorable course. In a light attack two or three days are generally sufficient to establish convalescence, and many patients continue their avocations in spite of the

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discomfort caused by the fever and nervous prostration. Even when the trachea and bronchial tubes are involved, three or four days is all that is usually allowed before the patient considers it necessary to be again about his business. But the prostration entailed by the attack usually continues from one to two or three weeks. Either of the forms of pneumonia growing out of influenza have usually lasted from fifty to one hundred per cent. longer than attacks of these diseases without the epidemic influence, and the fatal cases have undoubtedly been much more numerous, especially in old people. Patients who have suffered from pneumonia and even those who may have had comparatively mild attacks of tracheitis or bronchitis are apt to be left in a depressed condition which has rendered them peculiarly prone to the ultimate development of tuberculosis; and pre-existing phthisis has frequently been greatly aggravated by the influenza. I think I am perfectly safe in saying that during the past year hardly a week has elapsed that I have not seen some case of phthisis directly attributable to this disease.

The treatment of these cases has not been essentially different from that of inflammatory affections of the same parts occurring independently of the epidemic influence. However, careful attention to the nutrition, ferruginous and bitter tonics, especially strychnia, have been demanded more imperatively, and ultimately a change of climate has been more often required.

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LA GRIPPE; ITS EFFECTS ON THE EYE AND EAR.

By Dr. F. C. HOTZ,

Professor of Ophthalmology, Chicago Policlinic, etc.

Read before the Chicago Medical Society June 1st, 1891.

The morbific agent of influenza, whatever it may be, shows such a strong affinity for mucous membranes it is not surprising that its effects on the organs of sight and hearing are observed principally in the mucous linings of the eye and ear. In fact all the cases in my own practice were affections of the conjunctiva and of that part of the cornea (the epithelial layer) which anatomy declares to belong to the conjunctiva; and effections of the middle ear. It is true that some cases have been reported of affections of the optic nerve (optic neuritis) terminating in some instances in atrophy, and cases of temporary blindness, without any visible changes in the fundus when examined by the opthalmoscope; but these cases are so few, and their classical aspect showing absolutely no difference from the symptoms of such affections occurring under other circumstances, that I cannot fully persuade myself they should be considered as effects of the influenza; I am inclined to think it is a matter of coincidence rather than of cause and effect.

1. The *effect of influenza upon the eye* was shown last winter and the winter before by a large increase in the number of cases of conjunctivitis in dispensary and private practice. As the conjunctivitis did not show anything peculiar, I will not spend any time over it, but simply mention the fact. A more interesting and important sequela of la grippe is the inflammations of the cornea ushered in by symptoms of acute irritation best likened to the sensation and appearance of the eye caused by the presence of a foreign substance under the conjunctiva or in the cornea, a severe, sharp pain, increased secretion of tears, intolerance of light, redness of the conjunctiva, the lids, and the eyeball. Frequently, such cases could be mistaken for simple irritation or inflammation of the conjunctiva, especially as the changes in the cornea were often not discoverable by the ordinary diffused daylight.

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The changes in the cornea were of two types. In one set of cases, we found a zigzag line of superficial ulceration in the cornea exactly like that which some ten years ago were described by Dr. Kipp as malarial keratitis. The zigzag ulcer of this affection, called *keratitis dentritica*, begins at some point on the border of

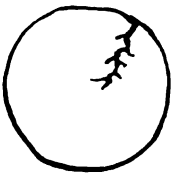

FIG. 1. Keratitis Dentritica.

FIG. 2. Ten times enlarged.

the cornea and travels toward the center, or even extends beyond the center, and may be met by another similar formation which has started from some other point at the periphery of the cornea. As these changes always take place in the surface layers of the corneal epithelium they attract our attention much quicker than the other form of keratitis of which I will now speak. In this

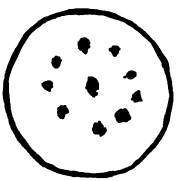

FIG. 3. Keratitis Subepitheliatis.

case, the surface of the cornea shows no disturbance; it looks

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perfectly smooth and brilliant, but on close examination we find by focal illumination small round grayish dots, located in the deeper layers of the epithelium. This affection has therefore received the name of Subepithelial Keratitis. These dots may be scattered all over the cornea, or they may be densely packed together into one cloud, which, however, under the focal illumination will always be distinguishable as consisting of a number of small roundish points. Only a short time ago I discharged a case in which these infiltrations of the cornea were arranged in a circle aronnd a larger one in the center of the cornea. The central one was large enough to be just distinguished by the ordinary daylight, but those placed in the circle around the central one were not thus visible; they could only be distinguished by focal illumination. This is an important point to remember, since without careful inspection by focal light such cases are easily taken for simple conjuctival disturbances.

In all these cases the vascular irritation was of the conjuctival character, not showing that dense red ring or zone around the cornea which we usually find in inflammation of that tissue. The pain and sensitiveness of the eye, the quick reaction to the slightest touch, the increased secretion of tears, were very marked in these cases; and the course was very slow and protracted. In the dentritic form recovery was quicker than in the other, which usually taxed the patience of the patient and attending physician to the last extreme. Two months was the shortest period in which I saw the eye recover its normal condition and free itself of that excessive irritability and the only remedy which gave temporary relief and made the eye comfortable for the time being, was cocaine. Mydriatics seemed to act indifferently, or to actually aggravate the irritation. In some cases, undoubtedly, the eyes were more irritated and the patient complained of a sore feeling in the eye after the use of mydriatics than when cocaine alone was used. Quinine given internally had a decided beneficial effect on the neuralgic symptoms. It acted like a nerve sedative.

The prognosis in both kinds of keratitis is good, and it is only a question of time as to the recovery of the eye. No serious effect has resulted in any case of which I know. The tendency of these inflammations is not a destructive one; they neither extend deeply

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into the tissues of the cornea, nor do they lead to inflammation of deeper structures like the iris or ciliary body. The inflammation remains localized or limited to the surface of the cornea, and complete recovery is the final result.

We have numerous reports of inflammation of the middle ear as the result of iufluenza. The matter received quite marked attention at the last Inter-National Congress, as I see from the reports of the Otological Section. Three papers were read and fully discussed by a great many of the members present, and they seemed to agree pretty well as to the character of the influenza otitis.

The winter before last, and more especially last winter, I saw quite a number of cases of middle ear inflammations closely following or starting during an attack of influenza. In some cases the inflammation did not rise to a severe degree, showing simply the symptoms of a mild form of catarrhal middle ear inflammatiom with slight pain, and some redness of the membrana tympani, the main complaint being the tinnitus or buzzing sound and a fullness in the ear with decrease of the hearing power. Inflammations of this nature quickly subsided under the regulation treatment; but very frequently this inflammation assumed a more intense character, leading to a rapid secretion of fluid in the tympanic cavity, with deep redness and marked bulging of the drumhead, violent earache, the pain not being confined to the ear but extending far beyond over the whole side of the head, of a true neuralgic character with quick loss of hearing and great noise in the ear. Often within twelve hours perforation of the membrana tympani occurred, followed by the discharge of a thin fluid, which in the majority of my cases had a decided hemorrhagic character, being more or less tinged with red. The quick destruction of the membrana tympani, I thought, was something remarkable, Another remarkable thing in these cases is that the neuralgic pain did not usually subside with the discharge of the secretion from the middle ear. You know that in the case of ordinary otitis, the appearance of the discharge usually marks the subsidence of the ear-ache. But in a number of these cases it did not, and they reminded me very forcibly of cases of malarial otitis, in which the neuralgic feature is also

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strongly marked and the pain does not subside when the discharge from the ear appears. Another feature which led me to compare this form with malarial otitis was the extreme sensitiveness of the ear to any local application. The prognosis, however, as a rule, no matter how severe the symptoms, must be pronounced as good. In most cases there was quick recovery, in a few cases the mastoid cells became involved, but with no greater frequency, I dare say, than in cases of middle ear inflammation from other causes.

In the treatment of these cases I resorted to the use of quinine as a general medication, and, as I believe, with great benefit to my patients in relieving the neuralgic symptoms, the pain and irritability of the ears. As I stated before, the ear seemed very intolerant of local applications, and the quickest recoveries were made under very mild treatment; that is, boracic acid with cocaine as a warm instillation, and the occasional use of the catheter for relieving the middle ear and Eustachian tube from accumulated mucus. Not until all the acute symptoms had subsided, not until the sensitiveness of the ear had disappeared, and the hyperemia of the mucous membrane had departed did I resort, if necessary, to the insuflation of boracic acid powder. I may say that in using boracic acid powder in these or other cases I think it is a great mistake to fill up the ear with it, as has been done. It is also a great mistake to give the boracic acid to the patient with instructions to blow it into his ear. This remedy should be used only by the physician himself with the aid of his reflector, so that he can see how much and how well he sprays it over the affected part. I have seen patients blow it in and fill the whole ear, and a great deal of irritation was produced by such injudicious use of boracic acid.

In closing I may say that all the cases observed by me of the corneal as well as middle ear affections were one-sided affairs. I have not seen one case in which the keratitis had attacked both eyes, or the influenza otitis both ears.

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[*For Discussion see Society Proceedings.*]

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THE NERVOUS FEATURES AND SEQUENCES OF LA GRIPPE.

By ARCHIBALD CHURCH, M.D.

Professor of Neurology, Chicago Policlinic.

Read before the Chicago Medical Society, June 1st, 1891.

In the first notices of the epidemic of grippe, which commenced in Russia in the early autumn of 1889 and swept around the whole world by the middle of the following year, mention was prominently made of a nervous form. In the St. Petersburg dispatches, as very generally published, three varieties of the malady were enumerated, the gastric, the catarrhal and the nervous, and sometimes one and sometimes another of these forms was asserted to be the most prominent. Later, in France and Germany, the neurotic features seemed to prevail, while in England they received scanty mention, and in America were not apparently emphasized, though falling under sufficiently frequent observation. After the subsidence of the acute manifestations of the epidemic, however, many and various sequelæ were everywhere noticed during the ensuing six or eight months, and it came to be generally recognized that the grippe, at first denominated an insignificant illness, was one of the most serious plagues that medical history has numbered, not only in point of mortality but when its world-wide extent was considered, in the aggregate of illness and loss of human activity entailed.

A second experience with the disease during the past winter and spring has confirmed the teachings of the first visitation with only a too serious certainty, and a glance through the periodical literature of the past year and a half leaves one bewildered with the multiplicity of material that has accumulated. In weighing the recorded instances of nervous complications in this disease it is well to remember that during an epidemic of this nature every departure from health is liable to be attributed by the laity, and even by medical practitioners, to the prevailing malady; that many instances of minor ailments have probably

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been erroneously called grippe, and that a preceding attack of influenza is not a competent cause for every subsequent illness. A prime difficulty arises from the fact that the testimony of the patient or friends must usually be taken regarding the alleged attack of forerunning grippe which may not have been observed by a medical man at all. Moreover, it is not unreasonable to suppose that grippe and other diseases may occur concomitantly without necessary intimate relation. On the other hand, while it may be an argumentum ad hominem, probably no one who has experienced the almost instantaneous prostration of the influenza's onset, the disproportionate asthenia during its course, the severe rachialgia, neuralgia, headache and sleeplessness, and the subsequent long persistent neurasthenic state, will doubt its capability to produce upon the nervous system the profoundest impressions, which may in the predisposed give rise to molecular and anatomical changes. To the support of this proposition there is an almost endless list of trustworthy records, which will be shortly presented in brief.

Admitting that it is not proven and that there exist wide discrepancies among pathologists and bacteriologists as to the true nature of the disease, it may yet be assumed that grippe belongs to the zymotic group and is due to a parasitic growth. No other hypothesis will equally well explain all the manifestations and phenomena of the recent and historical epidemics of influenza or its individual peculiarities. Adopting this view, as does Nothnagle, it is easy to understand that the intensity of any group of symptoms forming a variety of the disease may be explained by a susceptibility peculiar to the given individual on the side of the organs most profoundly affected. Thus it was universally noted that the subjects of lung trouble, cardiac mischief, bowel complaint, nervous or mental instability presented during the attack of grippe not only an intensification of pre-existing troubles, but the defective organs seemed to bear the brunt of the attack, furnished its salient characteristics for the particular case, and afterwards were the seat of sequential disturbance. The infection of influenza appears to have no elective seat for its pathological manifestations, but impregnating the entire organism, comes to the surface at the points of least resistance wherever they may be, is thereby given various complexions, and fails to present a uniform

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clinical type as does diphtheria, rheumatism and typhoid fever. If it have, however, one object of attack more pronounced than another, it is the nervous apparatus, with the interference of which practically all its symptoms are intimately associated, and if we agree with Bäumler, is merely a neuropathy due to ptomaine-poisoning. Vovart of Bordeaux, even in 1881, characterized it as a pneumogastric neurosis, seeing in the cardiac, gastric, intestinal and pulmonary symptoms only a perverted innervation of the vagus nerve.

Examination of a few representative German, French, English and American medical publications* furnishes some four hundred items and reports showing the intimate neurotic character of grippe, and justifies in some measure a consideration of the subject from a neurological standpoint. Among many others, Von Holst reports cases of grippe marked or followed by delirium, mania and melancholia; Herzog two cases of myelitis; Leichtenstern, cases of monoplegia, meningitis, hemiplegia, anosmia, loss of taste, chorea, clonic and tonic spasms, paræsthesia and hyperæsthesia; Reye and Münch of paralyses of embolic type; Eichorst of aphasia, chorea, and bladder paralysis; Leyden and Ewald of meningitis and muscular atrophy; Bergmeister, Eversbusch, Sattler and Uthoff of paralysis of accommodation; Königstein, Sattler and Uthoff of ophthalmoplegia externa; Fleischer of diplopia; Königstein of retro-bulbar, neuritis and atrophy; Hauser of hemeralopia; Holz of paralysis of the right cervical sympathetic, convulsions, coma and neuralgia; Eisenlohr of Landry's paralysis; Henoch, Remak and Eisenlohr of multiple neuritis; Bernhardt of hysteria; Erlenmeyer of epilepsy; Ehrenhaus of retention of urine; Leyden of delirium and fatal coma; Ewald of various neuralgias; Drasche of paralysis of all four extremities and of polio-myelitis anterior acuta; Bäumler of syncope, neuritis and cardiac neuroses; and Politzer of eighteen cases of mastoid suppuration following otitis media with threatened cerebral extension.

Of French observers of prominence Huchard reports cardiac symptoms dependent upon trouble with the pneumogastric, as syncope, slowness of pulse, arythmia, intermittance, collapse,

* Berliner klin. Wochenschrift, Schmidt's Jahrbücher, Semaine Médicale, Progrès Medical, London Lancet, British Medical Journal, Medical Record, N. Y., Medical News, Phila., Journal Am. Med. Association.

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angina pectoris and persistent anorexia; Comby notes in children convulsions and rachialgia; Bilhaut reports Jacksonian epilepsy, paraplegia, intense rachialgia, temporary hemiplegia, revived hysteria and otitis with fatal cerebral implication; Duhomme of recalled hysteria after six years absence; Féréol of pleurodynia without inflammation and Landry's paralysis; Gaucher of neuralgia, meningitis and angina pectoris; Joffroy of delirium and mania; Sevestre of meningitis; Meniére of fifty-seven cases of purulent otitis media; Lannois two cases of unilateral deafness from implication of the auditory nerve, while Verneuil calls attention to the liability to shock and tendency to suppuration upon surgical intervention, and Lefebyre makes an interesting reference to an encyclical published by Pope Boniface XIV. in 1745, giving a clear symptomatology, with the nervous manifestations of the then prevailing grippe, and absolving from Friday and Lenten fasting. Blocq states that in his opinion the neuroses of grippe are due to the primary action of the infection upon the nervous system, and the later troubles to secondary infection from ptomaines, and that they may be divided into old conditions revived and new conditions incited in the predisposed.

In England Gilbert Smith records a cerebral form of grippe resembling typhoid fever, and notes the implication of the nervous apparatus of respiration.

In this country Guiteras speaks of a nervous variety of grippe marked by headache, pain in the eyeballs, neuralgias, restlessness, nervous prostration, lassitude, local sweatings, and has noted meningitis following an attack; Dana records mania, encephalitis, facial paralysis, polio-myelitis, neuralgia and cardiac prostration following the grippe; Kinnicutt, as sequelæ, reports obstinate and acute neuralgias, peripheral neuritis, mental depression with suicidal tendencies, delirium, visual hallucinations, cramps, herpes zoster and convulsions in children; Starr, suicidal neurasthenia, neuralgias and multiple neuritis; Wright, uterine pain, false labor pains, urethral pains and sudden dyspnœa; Draper, cerebro-spinal meningitis.

The epidemic of 1847 in Russia is said to have been marked by frequent cases of cerebro-spinal meningitis, and the Health Officer of Cleveland, in April last, asserted that cerebro-spinal

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meningitis following the grippe was almost epidemic in that city, if he is corrrectly reported by the daily press.

Before the Chicago Medical Society Dr. C. M. Hansen has reported a case of retro-bulbar neuritis which he attributes to the grippe, and the writer has published there two cases of multiple neuritis for which no other reasonable cause could be assigned. To these may now be added three more cases of multiple neuritis, a case of cerebro-spinal meningitis with fatal termination, one of cerebral meningitis, one of acute delirious mania, and two cases of melancholia, in all of which the grippe, with very great probability, acted as the inciting cause, though in the cases of mental disease predisposing factors were represented respectively by a former attack, heredity and lactation.

This somewhat extended list is only a small part of the material that might be cited, yet it cannot be considered as entirely and satisfactory demonstrative of the proposition that the nervous disorders following the grippe were its direct results; for all the conditions mentioned are noted in the absence of influenza, and it may not be contended that a distemper which affected the great majority of mankind is essentially causal, unless at the same time the aggregate of such nervous troubles is very greatly increased. This can be statistically shown to be the case. In the meantime, a form of influenza pre-eminently nervous must be conceded; for the presence of headache, neuralgia, delirium, depression, perverted cardiac innervation collapse, convulsions and coma during the active stage of the disorder have been so frequently and widely noted that their dependence upon the prevalent disease is unquestionable.

In considering the secondary neuroses associated with grippe much that is strongly suggestive can be found in official mortality records for the past few years, and we may take those of the Chicago Health Office as an example, not forgetting that based as they are upon the certificates of all sorts of practitioners of medicine, there is in them a large margin of diagnostic error. It is also to be borne in mind that these secondary neuroses are not of a markedly fatal tendency, so that mortality records are not completely indicative of their prevalence. Taken in conjuction, however, with individual observations such as have been mentioned, the combination justifies moderate deductions.

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In the enumeration of death-causes under the heading "Nervous Diseases," which embraces everything from brain tumor to hysteria, we find in the years 1888 and 1889 but slight variations from month to month, and under the sub-heads of cerebro-spinal fever, apoplexy, convulsions and meningitis, the deaths are also equally distributed throughout the year. The proportion of deaths from alleged nervous diseases to the number of deaths from all causes is very close to sixteen per cent. This ratio was maintained in 1890 and during the first four months of 1891, when the mortality-rate per thousand was raised by an enormous increase in the number of deaths from pneumonia and other acute and chronic chest diseases induced or aggravated by the grippe, showing at least that the nervous system was not immune, and more, that it was as actively and fatally affected as the chest in the proportion which it usually bears to the general death rate. This is clearly marked in March and April, 1891, when the frightful death rate of thirty-four and a fraction per thousand was reached. During these months, the deaths from nervous diseases more than doubled their average of previous years. In 1890, also, this increase in deaths from nervous diseases continued for several months following the subsidence of the grippe. The great increase is mainly found under the items, "meningitis" and "convulsions." Thus in the first four months of 1891, meningitis numbers 53, 63, 105 and 198, fatalities, and convulsions, 125, 98, 219 and 229, fatal cases, respectively, which is considerably more than twice the average of preceding years, and of similar periods of preceding years, a difference not to be explained by increase of population. The same is true for the months of 1890, during which the grippe prevailed and for the months immediately following its disappearance.

(See tables I and II.)

Regarding the assertion that grippe is an inciting cause of insanity, information is received from three State Hospitals for the Insane, that of eight hundred and seventy-four admissions during the eighteen months preceding the first of May, 1891, forty-five cases had been received in which the grippe, with more or less probability of its being the fact, was assigned as the determining cause of the mental disease, but in all or nearly all these cases, other and remote causes were operative. It is also stated

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TABLE I.—Showing Mortality in Chicago during 1888, '89, '90 and the first four months of 1891, from Convulsions, Meningitis, and diseases of the nervous system generally.

CAUSE OF DEATH.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.	Average Monthly.
Diseases of Nervous System, 1888.....	243	144	235	262	223	244	247	216	166	169	170	177	2546	212.1
" " " " 1889.....	213	187	204	191	247	192	306	217	220	220	251	232	2680	223.3
" " " " 1890.....	311	289	286	257	244	423	305	295	209	198	206	232	2255	271.2
" " " " 1891.....	277	284	495	618									1674	418.5
Convulsions, 1888	99	83	96	112	75	71	99	90	68	76	77	66	1012	84.5
" 1889	89	76	81	62	108	77	143	84	85	76	99	102	1082	90.1
" 1890	151	124	108	96	80	119	131	124	90	86	71	83	1263	105.2
" 1891	125	98	219	229									671	167.7
Meningitis, 1888	46	35	50	55	53	50	58	37	32	23	34	28	501	41.6
" 1889	42	42	55	43	49	40	62	46	48	36	42	41	546	45.5
" 1890	58	66	65	54	52	49	57	71	37	27	38	47	621	51.8
" 1891	53	63	105	198									419	104.7

TABLE II.—Population and Death Rate per 1000 in Chicago.

PERIOD.	1888.	1889.	1890.	4 months of 1891.
Death rate per 1000.....	19900	17.48	18.22	26.92
Population.....	830,000	1,100,000	1,200,000	1,200,000

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by a number of asylum physicians that grippe intensified mental disorders when attacking the insane, though in a very few instances the acute attack of influenza seemed to lead to a restoration to mental health, as is not very rarely the case after typhoid or other fever. An examination of the Lunacy Records of the Cook County Court shows an increase in the number of commitments following the influenza epidemic of '90, and again during the prevalence of the disease in the current year as far as they are now available up to May 1st.

Taking the year 1889 for comparison, and it is a fair one for the purpose, and dividing it into three periods of four months each, we find an average of fifty-nine and one-half commitments monthly in the first, fifty-four and one-half in the second, and thirty-six and three-quarters in the third division, with an annual monthly average of fifty and one-quarter. In 1890 the annual monthly average runs up to fifty-nine and four-fifths, with fifty-eight and three-quarters in the first period of four months, seventy and three-quarters in the middle period, which followed the grippe, and fifty in the final division. This increase and changed order of frequency of commitment cannot be explained by increase or movement of the population of the county. Again, in the first four months of 1891 the high average of sixty-seven and one-quarter cases monthly have passed this court, with eighty-four in January and seventy-eight in May. It may be merely coincidental, but the fact remains that in each year the epidemic of influenza has been attended by an increased number of proceedings for the commitment of insane persons. Unfortunately the records are of that imperfect nature that no details can be learned as to the duration and character of the insanity in the various cases. (See table III.)

TABLE III.—MONTHLY AVERAGE OF COMMITMENTS OF THE INSANE IN THE COOK COUNTY COURT.

PERIOD.	1889.	1890.	1891.
First four months	59.50	58.75	67.25
Second four months	54.50	70.75	
Third four months	36.75	50.00	
Yearly Average	50.25	59.83	

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The liability to multiple neuritis after grippe recalls very clearly the analagous sequel of diphtheria, typhoid fever and other infectious maladies, and no doubt may be explained best by ptomaine poisoning, the result of the specific infection. Similarly the bulbar symptoms manifested through the vagus and translated into cardiac disturbances, dyspnœa, syncope, and even fatal collapse have their congeners in the so-called diphtheritic pneumogastric crises. The persisting neurasthenic condition which so usually follows influenza, is attributed by some to cardiac weakness of nervous origin, and this contention is not without weight if it is observed that even after appetite, sleep, body-weight, and physical functions have been long restored, the slightest exertion immediately produces disproportionate fatigue accompanied almost invariably by either a retarded or more frequently an accelerated pulse and rarely by precordial distress and even by angina pectoris.

Upon the data presented, the following conclusions seem to be thoroughly well founded:

1. That there is a clinically well marked variety of influenza, which may properly be denominated nervous grippe.

2. That the infection of influenza has a marked action upon the nervous system which may give rise to immediate acute manifestations or to remote and persistent conditions.

3. That in the predisposed, grippe is competent to cause marked excitement or great depression of the motor, sensory and mental nervous apparatus.

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[*For Discussion see Society Proceedings.*]

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LA GRIPPE IN ITS RELATIONS TO THE RENAL FUNCTIONS.

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Professor of Clinical Medicine, Chicago Medical College, Etc.

Read before the Chicago Medical Society June 1st, 1891.

I shall confine my remarks to a few observations based upon my own experience, acquired in the treatment of cases during the past winter. And, by way of illustration, I will narrate a single case, adding the assurance that it is typical of several others.

Mr. X., a well-known business man aged about sixty-five, was seized with la grippe April 12th, 1891. He had temperature ranging from 100° to 103°; harrassing cough; coarse dry râles, followed by moist râles, with considerable respiratory oppression. The bowels were constipated; tongue heavily coated; loathing of food. The urine was scanty (twenty-four to thirty ounces per diem); acid; heavily loaded with urates, but containing no albumen or tube casts. The patient recovered in a little more than a week; or at least was discharged convalescent with a caution about exposure and overwork. But he went to his store too soon, and in a few days relapsed, and I was recalled. I found him with pyrexia of an intermittent type; he rapidly sank into a "typhoid" condition, but without evidences of the typhoid lesion; and finding it necessary to christen the disease I called it "typho-malarial fever."

At my first visit during the second attack, I procured a specimen of the patient's urine, and the examination revealed the following results:

Daily quantity, 20 to 24 ounces; reaction strongly acid; specific gravity, 1024 to 1030; albumen, a well-marked quantity; sugar, none.

Formative elements:

Water in great quantity; leuccytes, considerable numbers; epithelia of renal tubule and of bladder; mucin casts in great num-

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bers; hyaline casts, a few of small size; blood globules, a small number.

The patient's illness lasted about four weeks; the albumen increased during the first ten days, as did the formative elements (although their character did not change materially), after which the albumen and casts began to diminish, and at the present time have all but disappeared. Meantime the temperature has fallen to normal, and all other symptoms have improved in proportion. And this case, as I have already said, is but one of a dozen or more which have fallen under my observation during the past three months.

Pursuing the facts above related to their logical conclusion, we find that the disease called "La Grippe" produces the following effects upon the renal tissue: First, it induces a more or less intense hyperæmia; in my judgment a more constant and intense hyperæmia than is provoked by other acute febrile diseases. Two causes may be assigned for this, both of which probably exercise their influence in every case: First; the irritating effects of a "materies morbi," whatever that may be,—that is, the kidneys in the performance of their duties as scavengers, are over-worked; and the result is, turgidity of the renal vessels. Secondly, the great increase of nitrogenous waste, as a result of pyrexia. So great is this increase, that crystals or granules of the nitrogenous elements are frequently precipitated in the renal tubules, where they act the part of mechanical irritants, and pave the way for the next step in the series of morbid events.

The second step in this series is the development of a catarrhal nephritis, as evidenced in some cases by a trace of albumen in the urine, but, in all cases, by the formation of mucous casts, or threads of mucin which are formed in the renal tubules as a consequence of catarrhal excitement of the tubal epithelia. These mucin casts differ entirely from the so-called hyaline casts, in that they are *not* the product of an exudate from the blood vessels. Although a trace of albumen may frequently be found in catarrhal nephritis, it is hardly ever permanently present, and never in any considerable quantity. It is my present opinion that nearly every severe case of "La Grippe" is complicated by a pronounced catarrh of the renal tubules; and

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that this is one of the causes of the wearisome convalescence as well as the frequent relapses which we have all observed.

The third and last step in the pathological series is the development of a true croupous nephritis, as demonstrated by increased quantity of albumen, and the presence of true hyaline casts. When croupous nephritis accompanies or follows "La Grippe," I am satisfied that it generally is preceded by a catarrhal stage, so that it is entirely correct to place it as the third step in the process.

Most of these cases of consecutive croupous nephritis recover without inflicting permanent damage upon the kidneys, although in every case there is danger that it may drift along and develop into chronic Bright's disease.

Of course it will be understood that these brief remarks are suggestive only.

70 State Street.

[*For Discussion see Society Proceedings.*]

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THE ETIOLOGY OF INFANTILE SUMMER COMPLAINTS.

By M. P. HATFIELD, M.D.,

Professor of Diseases of Children, Chicago Medical College, Etc.

Read before the Chicago Medical Society June 15th, 1891.

The vast majority of the summer diarrhœas of infancy may be justly laid to one or all of a Herodian trinity of bad air, spoiled food, and faulty digestion, or bad air, bad food, bad digestion.

1. *Bad air.* Under this head we would include not only malaria, in its wider meaning, of air contaminated in any way by animal or vegetable exhalations, arsenical dust or coal-gas poisons, but also those sudden variations in temperature which experience shows to be so deleterious to the tender organism of the infant. Could we but eliminate all those cases of infantile summer diarrhœas arising from acute catarrhs, superinduced upon sub-acute gastric and intestinal catarrhs, due either to chilling or other atmospheric changes, we should be able largely to decrease our present frightful summer mortality among young children. Continuous heat is perhaps the most potent of these factors, for careful investigations seem to prove that neither barometric pressure, humidity, nor rainfall have any marked influence one way or another, while ground temperature above 54° F. at four feet below the surface, according to the figures of both Ballard and Baginsky, is invariably accompanied by increased infantile mortality. Independent tabulation of death and temperature tables in New York and Berlin reveals the fact that any sharp and *persistent* rise of temperature above 58° F. has a similar effect.

Explain these results as thermic fever, bacterial culture temperature, or telluric emanations, the fact remains that a persistent city temperature above 60° F. is immensely fatal to the average infant unless better cared for than it can be in the ordinary tenement house. The rapid improvement which such children show even in a day's stay at an open-air sanitarium strongly emphasizes

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this, but it is even more emphatically proven by the relapses which these little ones experience when they return to their poorly ventilated, overheated homes for the night.

2. *Bad food.* Not improbably no small share of this is due to the putrefactive changes produced in the child's food in these unsanitary quarters. Heat, overcrowding, and the emanations from soiled linen—for I believe in the contagiousness of Hayem's green microbe—all conspire to ruin food, otherwise potentially good. Add to this the intrinsically bad food, such as partially spoiled fruit, pickles, peanuts, cheap candies and cakes, with which the parents of our dispensary patients try to appease the long-suffering stomachs of their little ones, and the wonder is that any of these children live, not that so many of them die. The survival of the fittest, not the doctor's aid, saves most of those who pass through the perils of the cook stove and the pantry of their first and second years. Here, without better municipal inspection of milk and dwellings, our efforts are of comparatively little avail, but there is another and more hopeful class of fairly intelligent people who are fully as anxious and faithful as ourselves in carrying out all reasonable directions in regard to the sterilization of milk and the regulation of diet. For such as these this Society ought to gratuitously furnish helpful suggestions during the heated season, until a sour nursing-bottle in the house of the rich or the poor should be considered as much of a disgrace as personal uncleanliness, and far more dangerous to the life of the child.

3. *Bad digestion.* As less than three per cent. of the total mortality of young children occurs among those who are breast-fed, we must admit that any variation from normal digestion of breast milk is perilous to the young child—chiefly when it suffers from the depressing influence of continued heat upon itself, combined with the putrefactive changes induced in artificial foods by the same agent. Furthermore, we must remember that the majority of the second generation of city-bred children come into the world with lowered vitality and a liability to death from slighter causes than the country child. These are the children who show disturbances of digestion with the first warm weather of May or June, are better or worse with the variations of heat in the latter month, and die in large numbers during the first con-

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tinued heat of the summer. The physician has nothing to do with the political economist's dictum that such children are born to die and ought to be allowed to do so. *Obstat principiis* is as essential here as in mechanics, for it is impossible to secure any gratifying decrease in the summer mortality of these children without a close watch being kept upon their prediarrhœal errors of digestion. The discussion of this properly belongs to prophylaxis, next to be discussed according to our programme, and hence I leave it at this point, but with the profound conviction that our success in treatment turns very largely upon our knowledge of and skill in first removing infantile indigestion—always hurtful and generally dangerous if neglected.

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[*For Discussion see Society Proceedings.*]

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PROPHYLAXIS OF SUMMER COMPLAINTS OF CHILDREN.

By E. J. DOERING, M.D.

Read before the Chicago Medical Society June 15th, 1891.

Mr. President, Gentlemen: The great mortality among infants from bowel complaints in summer, in this city, is principally due to the faults and imperfections of our municipal government, and the apathy of the medical profession in not demanding and securing needed reforms. Given pure air, pure water and pure milk, and the so-called summer complaints of children become of interest only by reason of their rare occurrence. The first and principal duty of our local authorities is to care and provide for the health and security of the citizen. How is this duty performed? Let us consider the question of milk, which interests us most to-night, and is the principal article of food for infants and young children, and consumed by every inhabitant of this city. Gentlemen, it is scarcely capable of belief, but it is nevertheless true, that at the close of the nineteenth century, in this great city of one million inhabitants, this World's Fair city, a city which boasts of its energy and progressive character, there is absolutely no inspection whatever of the milk furnished in vast quantities to its citizens every day in the year. Listen to this letter from our Health Commissioner:

City of Chicago,
Department of Health.
June 1st, 1891.

E. J. Doering, M.D., 2406 Prairie avenue, Chicago.

Dear Doctor: I am in receipt of your favor, May 30th, relative to milk inspection. Replying, will say there is no ordinance regulating or providing for milk inspection. That there should be, is unquestionably true. Professor Long and myself have had some conversations relative to this matter, with the view of having an ordinance introduced. I am most heartily in favor of any movement that will bring about the change so much needed, and shall be pleased to co-operate in any way possible. Many of the large dealers are heartily in favor of inspection, adopting a standard, and obliging all dealers to conform to the standard.

Respectfully yours,

John D. Ware, *Commissioner of Health.*

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That such a disgraceful state of affairs should exist in this city is a sad reflection upon the interest shown by our profession in public health matters. Since the above letter was received I have seen it stated in the daily papers that an ordinance is being prepared by the Corporation Counsel covering the point at issue, and I trust our energetic President will appoint a committee to co-operate with the Health Commissioner in securing the passage of such a much-needed regulation. There is no more favorable opportunity for action than the present time. That public sentiment is being aroused in this matter may be seen from the following editorial which appeared very recently in the Chicago *Tribune*, and which shows such an intelligent understanding of the questions involved that I take the liberty of reading it in full:

SANITARY INSPECTION OF MILK.

In several cities of the United States the sale of milk that has been watered or robbed of its cream is forbidden, and inspectors are charged with the duty of seeing that the law is obeyed. In Chicago the people have not even this protection. The matter is left entirely to the conscience or prudence of those who supply the milk to consumers, and it goes without saying that the result is far from being a uniform one. Some sections of the city are served with a reasonably good article, while elsewhere the quality ranges all the way from moderate impoverishment to the palest of sky-blue trash that can by a liberal construction of the word be made to bear the name of "milk."

Yet this is a minor evil compared with one against which no safeguard has been interposed by municipal authority. The watering of milk or the abstraction of part of its cream is only a steal equivalent to that of selling twelve ounces of sugar as a pound or palming off a three-quarter dollar as a whole one. But if the milk carry with it the seeds (bacilli) of consumption, having been drawn from cows suffering with that disease, it is an active cause of poison to the human organism. To increase the quantity is only to augment the infliction and enlarge the danger of death to the user. And the mischief is all the greater as the most liberal consumption of milk is by persons of weak constitution. The puny baby struggling against the sicknesses of infancy, the invalid unable to take nourishment in more solid form, and the aged whose sands of life have so nearly run out that a slight disturbance of equilibrium may precipitate them into the grave are the ones who use milk mostly freely, and at the same time are most liable to be affected by its impurities if any exist. Yet it is admitted that the milk served out in this city is often taken from cows suffering from tuberculosis and scarlatina, while more of it is open to the objection that it comes from filthy stables which may at any moment prove to be hot-beds of disease. Analysis of the milk supply shows the not infrequent presence of the product from tuberculous cows, but nothing

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is done to protect the people from the consequences of buying and consuming the dangerous material.

The difficulty of securing adequate protection against infection from the milk of tuberculous cows is much increased by the fact that the sources of supply for a large city are widely scattered, not only through many towns that are scores of miles distant, but some which are in adjacent states. And inspection to be effectual in preventing the sale of this disease-breeding milk must be made at each place where a herd of cows is kept. The lactometer may be applied in the city to ascertain if the milk contain its due proportion of butter fat, but the other fact can only be reached by inspection of the animals in the places where they are kept, and that must be done by competent persons. Such inspection should include that of the conditions under which the cows are fed and otherwise cared for, and regard to the cleanliness of the processes by which the milk is drawn and handled as well as the health of the animal. It is a question if such an efficiency of lacteal inspection can be secured for Chicago, with or without the aid of a state law, as it would be an expensive affair and perhaps found very difficult to carry out in practice even after funds had been provided therefor. But no one who looks for a few minutes at the conditions and possibilities of the business will deny that such a safeguard to the health of the people is highly desirable, or that it would probably diminish by an appreciable percentage the city mortality, while vastly lessening the number of those who are each year sufferers from sickness traceable to the use of milk that contains stable manure with the germs of tuberculous diseases.

With very little effort on the part of a committee the other daily papers will be glad to take up this matter and so create the necessary public sentiment, which will be a powerful aid in the passage of such an ordinance as proposed, and we will have accomplished the first and most important step towards a practical solution of the problem of prophylaxis of summer complaints in children. The next and more difficult step will be the securing of legislation requiring regular inspection of milch-cows by state veterinary surgeons and laws requiring the transportation of milk in refrigerator cars at the proper temperature. It has been my intention for some years to carry out on a smaller scale the suggestions made, but lack of time has interfered with the completion of my plans. Recently I have made a beginning by interesting others, and I trust the time is not far distant when a company will be formed which will purchase a large tract of good pasture land not far from this city, erect thereon large, commodious, well-ventilated stables, stock with the best of cows, and, under the management of a competent physician and veterinary

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surgeon, provide a system of furnishing pure milk in sterilized bottles directly to the consumer. This is intended to be an aid to the physician in securing pure milk for his patients, a thing we are not able to do now. There is no reason, however, why this luxury should be enjoyed only by those able to pay well for it. It is entirely within the province of the state to demand that all milk sold shall be in excellence and purity equal to that obtained by the plan which I have thus briefly outlined to you.

I take this opportunity to impress upon you the urgent necessity of using your influence to secure for this city a Non-Partisan Health Department, of far more importance to the people than a Non-Partisan Judiciary, for which each right-minded citizen is heartily in favor, as recent events have shown. It is a lamentable fact that, regardless of the efficiency of our Health Commissioners, no matter how faithful in the discharge of their duties, how valued their experience, a change is likely to occur every two years and inexperienced men go into office. This is all radically wrong. It is trifling with the health of the people to make sanitary officers political appointees. We must put an end to the system that gives an appointment as Health Officer or Inspector to the man who has a "pull" with the aldermen, a record of party service at the primaries, or an intimate acquaintance with the saloon-keepers of his ward.

It is partly our shame, gentlemen, that such things exist, for as a profession we have no influence. All these years we have quietly submitted, afraid to exert our rights as citizens and tax-payers. What we need is a Standing Committee on Political Action, whose duty it should be to require ante-election pledges, and direct our influence and our votes and the votes we can secure (a vast number) for the election of officials who will stand pledged for a non-partisan Health Department, and who will give us respectful attention in all our demands pertaining to public health. We forget that in union is strength, and hence as a social factor we rank to-day far below the United Order of Sewer-cleaners, the Society of Steamfitters, or the Bricklayers' Union. To this indifference on our part has been due the existence in our midst of such a cesspool of iniquity as the Jefferson Insane Asylum, with its long history of corruption, degradation and infamy. It is our fault that we have no voice in the appointments

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to the medical staff of the Cook County Hospital and other public institutions devoted to the care of the sick. We are largely to blame that there is to-day in this city no hospital for contagious diseases, and that patients suffering from such a simple contagious disease as measles are carted around in police patrol wagons from hospital to hospital, and refused admission. And so it comes that as a profession we have no influence; that one woman can defeat all our efforts to strike from our statute books those infamous laws relating to insanity. I question whether in any other state except in Illinois the profession would quietly allow pot-house politicians such as we have in our legislature to show their maliciousness by legislating out of office Dr. John H. Rauch, one of the foremost sanitarians in the United States, one who has rendered the greatest possible service to the cause of higher medical education, without so much even as a formal vote of protest. Shame on us, gentlemen, that a Society composed of six hundred intelligent, educated physicians is willing to be ignored, sneered at, contemptuously disregarded by our law-makers in matters which it should be our right and privilege to dictate, if we but would assert our power which now lies dormant.

Mr. President, gentlemen, to return again to the subject-matter which has brought us together to-night, let me request, that as the hot season will soon be with us, that something be done at once as a beginning in the general prophylaxis of summer complaints. First of all, let the chair appoint a committee to-night to co-operate with the Health Commissioner in securing the passage of the badly needed ordinance relating to milk inspection.

Furthermore, I would suggest the passing of a resolution to-night requesting the Health Commissioner to have printed in circular form a few directions relating to the proper care of infants in hot weather, with instructions how to sterilize milk, how and with what to feed a baby, explaining the necessity of bathing, etc.; this circular to be printed in several languages (similar to the political dodgers used in the recent mayoralty campaign) and distributed throughout the districts of the city inhabited by the poor and ignorant classes. I would also urge the members of this Society to take a more active interest in the Fresh Air Fund so nobly championed by the *Daily News*. Experi-

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ence has shown that the greatest possible good is derived by sending sick and delicate infants to the lake shore or giving them an outing in the country. A little missionary work among our wealthier patients would secure more liberal contributions to this Charity Fund, one of the grandest in existence, These suggestions are practicable and readily carried out and should be acted upon at once.

But finally, Mr. President and Gentlemen, in closing my remarks let me urge upon you, each and every one, to enter upon the greater and grander work of crystallizing out of this heterogeneous organization—the Chicago Medical Society—a solid, compact body, with the fixed purpose and determination to demand and obtain a voice in all matters pertaining to the public health and thus accomplish the noblest and highest aim of our chosen calling —the prophylaxis of disease.

2406 Prairie Avenue.

[*For Discussion see Society Proceedings.*]

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INFANT FEEDING IN SUMMER COMPLAINTS.

By CHAS. WARRINGTON EARLE, M.D.,

Professor of Diseases of Children, Woman's Medical College, Chicago, Ill.

Read before the Chicago Medical Society, June 15th, 1891.

The greatest of mortalities at all times and among all nations is due to the lack of mother's milk. In Berlin one-half of all the children born out of wedlock die within six months, and during the summer months in all countries and among all nationalities a very great number of children succumb to errors of diet. Without proper diet, and without particular attention given to its preparation and administration, all medication of these little people for the so-called summer diseases, is useless and a failure.

The question, then, rising above all others which should receive attention by every physician before he prescribes a particle of medicine to a baby with any form of summer diarrhea, is its diet.

At the commencement we have a few general facts which I think will be acknowledged by every one of experience, and which need little if any discussion.

1st. That mother's milk is the food par excellence for a baby.

2d. If this cannot be furnished, in large cities at least, a wet-nurse should be procured.

3d. If the mother or a wet-nurse can provide only part enough nourishment for the child, it is better to fill in with some of the substitutes, such as cow's milk, cream foods, or some of the prepared foods, all properly sterilized, than to try to bring up the child upon a strictly artificial food. That is, a mixed diet is preferable to a strictly artificial one.

4th. If, for causes which I have not time to enumerate, but which are well known to every physician, the mother cannot supply the nourishment, and if, from causes over which we have no control, a wet-nurse cannot be secured, an artificial diet must be furnished.

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Given, then, a sick child badly nourished, probably with diarrhea or vomiting, gradually losing flesh, what shall we feed it?

Before proceeding further, I desire to introduce some experience based upon bed-side observation that hardly comes within our subject, but it is so important, and it really is regarding infant feeding, that I must say something concerning it. I refer to feeding infants prematurely born.

In part of these cases the milk secretion of the mother is at once established and the child is nourished from the very commencement with the food which its little non-developed digestive apparatus can best provide for; in others, several weeks may elapse before the milk secretion is established, and during that time something must be provided for its nourishment. Several have already come under my care. I have notes at this moment of four infants born at about the seventh month, where an artificial food, from necessity, had to be provided. I have succeeded in saving these lives on an artificial food. Of course breast milk will promise and will give the best results, but in many of these cases, nature's best food can not be obtained for affection or gold. We must under such circumstances furnish an artificial diet.

Cream is the basis, barley-water, rice-water, or toast-water, the menstruum, to which is added a little salt, a little sugar of milk, and a small amount of lime-water.

A prematurely born baby should be fed a small quantity *frequently*. Sometimes not more than a half-teaspoonful, and when not fed from the spoon let an ordinary ounce bottle be provided with a rubber mouth-piece. I have no use for the large nursing bottle provided with glass and rubber tubings and brushes, for either these prematurely born babies or any other. For the first few days, perhaps, cracker-water with a small amount of sugar of milk is all that is necessary. Then cream added to a little cracker-water, or cream and rice-water; then cream and barley-water, and if vomiting takes place, a small amount of lime-water should be added. If from any reason the cream does not agree with the baby, condensed milk with barley-water, a little salt, and possibly the addition of a little lime-water. By varying the amount of cream, using either barley-water or rice-water as the diluent, adding a little sugar of milk and a little

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grain of salt, and sometimes a little condensed milk, when from any cause the cream disagrees with the infant, one is able to carry along one of these puny children until such time as the milk secretion is established.

These preparations of food should all be sterilized, and with very little trouble and in a smaller bottle than those suggested for older children, it can be done.

Coming to consider the use of artificial foods, we should state in unmistaken terms to mothers that because one baby has been brought up on a given artificial food, it does not follow that the same food will agree with the next baby. One food nourishes a given baby well, but may, if administered persistently, kill the next baby.

The peculiarities, good and bad, of the different foods which I shall consider will be purely from a clinical standpoint. The discussions regarding the chemical compositions and arrangements must come from the chemists themselves.

My trouble has been to find a food that would in the first place agree with a baby, and, secondly, that would nourish it.

Cow's milk will agree with some babies, but in many cases its administration is followed by vomiting and passing great masses of curds (caseine). Manufactured foods are frequently retained by the child, but he emaciates and many die from inanition.

Very early in my experience I began to detect a difference in foods. Some agreed with a young baby and would not nourish an older child; while other foods disagreed with a young infant, and furnished abundant nutriment to a child ten or twelve months of age. Without investigating in a scientific manner the composition of these foods, I came to call them young foods and old foods. Among the foods which I have found suitable for very young children, I would mention cream and barley first, cream and oatmeal water or rice-water, condensed milk, with some restrictions, Nestle's and Carnrick's foods and malted milk. I should not fail to speak of the white of egg as a substance very easily digested by children with weak stomachs, and which gives to them a very fair degree of nourishment. Then comes Mellin's food, Imperial Granum, and Ridge's food for older children. I speak of these foods after considerable study and rather extended

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experience with them, and do not place any as first, or in any degree a perfect food.

Let us examine the constituents of these foods, and point out their imperfections. It will be noticed that simply from experience I had at first selected a food with more fat—that is, cream and barley-water. Next came milk and malted foods, and then for older children the farinaceous and Liebig's foods, Mellin's, Ridge's and Imperial Granum. It appears to me that there is good in all these foods, but the medical profession do not take sufficient pains to designate a food suitable for a young or older child. The matter is left too largely to the people, until a food of their selection has produced its deleterious effects, and then we are called, only to find a child emaciated, impoverished and with a digestive apparatus so thoroughly out of repair that the child dies before we can bring about a normal condition of digestion.

I should say nothing in regard to prepared foods if the profession and public were prepared to accept what I shall say about sterilized milk as a food for infants. But inasmuch as it will be some time before some of our profession will advocate and the people use sterilized food, something, it appears to me, should be said concerning them.

Recommendations and Objections to Some of the Artificial Foods.

Nestle's food is in my judgment the best example of the so-called milk foods. It is a very popular food, and agrees with quite a large number of children. It is said by some druggists that more Nestle's food is sold than any other infant food upon our Chicago market. Condensed milk is the basis of this food; to this is added a certain amount of wheat flour and, stated by some, oat meal; this is then made into biscuits, thoroughly cooked, ground, and mixed with condensed milk.

By the opponents of this food it is claimed that a large part of the starch is not converted, and thus the caseine of the milk has not been pre-digested. If properly sterilized, I believe this to be a valuable food for some babies.

The best preparation of Liebig's formula is called Mellin's and Horlick's foods. These foods are composed of barley meal and wheat flour and starch that has been converted into maltose.

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Both of these foods, added to a certain proportion of milk and water, and then all sterilized, furnished excellent nutrition to some babies. Theoretically, peptogenic milk powder should be a good food, but as a matter of fact it disagrees with a considerable number of babies. The greatest objection to this food is that its practical preparation in the household is hardly possible. It requires scientific skill to properly pre-digest this food, and the pancreatine which is used is exceedingly liable to putrefactive changes.

Condensed Milk.

I may remark in the beginning that the great trouble in the use of condensed milk is, that not enough is used. Every one should understand that milk is only condensed four times, and that a small amount will color a very large amount of water. The people do not understand this, and I am afraid that physicians do not take the trouble in many cases to investigate it. One teaspoonful of condensed milk will color twelve ounces of water, and I have known this to be given as a food to an infant. It is a starvation diet, and in the majority of cases sooner or later the child develops symptoms of bad nutrition.

In my experience the youngest infant will take condensed milk in the proportion of one to ten or fifteen—that is, barley or rice-water ten to fifteen pints, condensed milk, one part, sugar of milk, salt and the phosphates. Even this will only be sufficient for a short time, and one must soon either add more condensed milk, or, to the same food, cream. The agreement with each individual case, in less or increasing quantities, is the only safe rule for our guidance.

Objections have been made to condensed milk, and in all probability some of them are valid. We have already remarked that this food does not in all cases agree with infants.

It has been claimed that the character of the caseine is unchanged. It is possible that the diluent, barley or rice-water, may correct this to some extent. Certain it is that condensed milk with the above diluent agrees well with some children.

It has also been claimed that the large amount of cane sugar or glucose used in the preparation of condensed milk makes it more susceptible to fermentation. I am not aware that this objection

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has been removed, unless it is in a condensed milk made without sugar.

Cow's Milk.

This is a perfect food for the adult. It has fat, albumen, carbo-hydrates, and salts, and the adult stomach generally digests it with ease, and it is capable of sustaining life for a long period.

It forms, however, very heavy and dense curds, and in this respect is frequently extremely difficult to digest in a weak and undeveloped stomach.

It is also poor in fat compared with mother's milk, and with the objection urged; the tendency to form a hard, firm curd, and its rapid changes tending toward fermentation, in many cases, when used as a baby food, is the exciting cause of diseases, and remotely the food upon which emaciation, marasmus and death ensue.

Milk in the udder of the healthy cow is free from bacteria; the foreign elements which produce these disturbances obtain entrance after it has been drawn from the animal.

The milk from blooded cows, supposed to be richer in fat, has been tried, and in many cases works well, but unless sterilized has been a marked failure.

There is no reason why, however, when we know the food the cow is fed upon, that she is in a clean stable, and care is taken with the milk in a manner which is now well understood, that it should not be selected as the very best food for infants.

The index of good nutrition, whether the baby is on mother's milk, mixed food, or artificial, is in its growth. To this end the child should be frequently weighed, and we should inspect its appearance, look at its fontanels, etc.

In saying what I desire to say regarding the use of sterilized milk I am going over ground which is well understood by the majority of those present. For fear, however, that some have not kept up with this particular phase of infant feeding, I will give a very brief resumé of it. I have already spoken of the purity of milk when it is first drawn from the cow. The detritus which all of us have noticed very soon after, is apparent to all. That small particles of straw and dirt from the hands, and small black specks from some source, and minute particles of manure from the udder and teats of the cow are in this milk, is known to

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every one. The bacteriology of milk is very changeable. It is established that the fermentation of milk may be avoided by proper sterilization. It has been found that the simple single boiling of milk, as it is performed in the kitchen ordinarily, is insufficient; we must use, then, some sort of sterilizer.

Within the last month two articles have appeared, by Dr. Leeds and Dr. E. P. Davis, regarding the chemical value of sterilized milk. The main thought in Dr. Leeds' paper is that if milk in its sterilization is carried to a too high degree of temperature there is coagulation of the protides and destruction of the ferment. Without this care, he believes the sterilized milk is less perfect and less thoroughly digestible than raw milk; that to overcome these objections the milk should be rendered feebly alkaline with lime-water and raised to a heat of one hundred and fifty-five degrees for six minutes.

Dr. E. P. Davis makes the statement that sterilized milk, whether peptonized or not, results in temporary improvement in the nutrition of babies. He makes the statement that where the infant is fed in part by breast food and partly by a few meals of sterilized mixture each day, the infant thrives, but when the sterilized food alone is used, the infant fails. He believes that the condition of the alimentary canal in infants fed upon sterilized food is rapidly improved, and that a certain number of children sick with the summer diseases of children are also improved rapidly, but that on the whole, unless something else, some other food besides sterilized food, is used, that in the main, marasmus and bad nutrition is the result. This is so directly contrary to my experience that I must give the results of the use of this food in the cases which I have at hand at this moment. (See table.)

535 Washington Boulevard.

[*For Discussion see Society Proceedings.*]

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Table of Ten Cases Showing Conditions Under Ordinary Artificial Feeding and Under the Use of Sterilized Food.

Name.	Sex.	Ordinary Artificial Feeding.				Sterilized Food.					Present Condition.			Impression of Parents.
		Age.	Reason for.	Foods used.	Result.	Age.	Weight.	Condition.	Foods used.	Result.	Age.	Weight.	Condition.	
Schwarz.	F.	5 mos.	Preg. of Mother.	Nestle's food.	Vomiting, convulsions and colic.	6 mos.	11 lbs.	Sickly and very delicate.	Milk and oat-meal water, rice water; no breast milk.	Rice-water constipated. Oat-meal-water loosened bowels. No colic.	15 mos.	20 lbs.	Healthy, wiry, not flabby; walks; 6 teeth.	Mother says sterilized milk is not influenced like mother's milk, by hot weather, etc. "Preferred to any food."
Dyer.	M.	7 mos.	Sickness of Mother.	Milk only. (Not boiled.)	Health poor. No teeth.	9 mos.	18 lbs.	Poor health.	Milk only; no breast milk.	No colic.	10 mos.	26 lbs.	Health good; walks; 12 teeth.	"Grandest thing in the world for babies."
Geraghty.	F.	1½ mo.	Insufficient breast milk.	Sterilized milk without the sterilizer.	Weak, emaciated.	2 mos.	10 lbs.	Weak.	Milk; breast milk at night.	No colic.	7 mos.	18 lbs.	Fairly plump, good color, 2 teeth.	"Baby has grown well; sterilizer has proved most satisfactory."
Stoddard.	M.	½ mo.	Insufficient breast milk.	Milk and toast-water.		2 mos.	7 lbs.	Poor. Not growing.	Toast water and milk; later milk only. No breast milk.	Indigestion occasionally.	10 mos.	20 lbs.	Very satisfactory; flesh firm and fairly plump.	"Are in favor of it."
Hyde.	M.	2 wks.	Mastitis.	Eagle condensed milk.	"Appearance was starvation" Could not retain cow's milk.	1 mo.	7 lbs.	Losing ground.	Milk. Later. breast milk.	Baby began to improve at once.	4¾ mo.	16 lbs.	Strong and healthy.	"Best, outside of breast milk."
Solomon.	F.	Birth.	Mother had no milk	Nestle's cond. milk, Mellin's food, oat meal; every kind of food used in infant feeding.	Never gained a pound, cried all the time. Diarrhœa, etc,	6 mos.	8 lbs.	Poor, scrawny, sickly, delicate, bloodless baby. Miserable in every respect.	Milk as directed. No breast milk.	No more colic. Sleeps well.	15 mos.	26 lbs.	Round, strong, 5 teeth; trying to walk. Not a drop of medicine since using.	"Grandest thing ever devised." Before sterilized milk was used she never slept a night, or let any one else; since, has always slept well.
Harris.	M.	3 wks.	Insufficient breast milk.	Granum, Wagner's food, Horlick's food, and some mother's milk.	Fair.	2 mos.	11 lbs.	Beginning to complain. Some colic.	Milk diluted. Some breast milk.	Excellent in every respect.	10½ m.	18 lbs.	Good healthy baby.	"Only fact against it is time required to prepare food, which no mother minds."
Loomis.	M.	1 mo.	No breast milk.	Cow's milk in country worked O. K. In Chicago: Carnrick's food, condensed milk.	Cow's milk in country O. K. Cow's milk and all other in city disagreed.	5½ mo.	10 lbs.	Cough, fever, diarrhœa, vomiting, colic, fretful by night and day.	Milk as directed. No breast milk.	Bad symptoms have all disappeared.	6½ mos.	14 lbs.	Better in every respect.	Best food in city. Equal to cow's milk fresh in country. Superior to all artificial food tried in city.
Connery.	F.	2 wks.	Sore breasts.	Peptogenetic milk, Pulv. rice water, Nestle's food.	Bad.	5 wks.	12 lbs.		Milk and oat-meal water. Milk from one breast.	Agrees well.	7 mos.	19¼ lbs.	A No. 1.	"Too much cannot be said in favor of it."
Riordan.	M.	Birth.	Insufficient breast milk.	Rice - water, bread and milk.	Always colic. (Castoria every day.)	6 wks.	8-10 lbs.	Not growing. Colic and fretful.	Milk and oat-meal water. No breast milk.	Well; no colic; grows nicely.	4 mos.	12 lbs.	Excellent.	"Only trouble is that bottles break."

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OVARIOTOMY DURING PREGNANCY.

By Dr. OTTO ENGSTROM, Helsingfors.

Translated and Condensed from "Annales de Gynecologie," October and November, 1890, by S. Cecil Stanton, Chicago.

Ovarian tumors, always of grave significance, become far more dangerous during pregnancy. Ovarian tumor and pregnancy may co-exist and develop without unfavorable result, but very often premature labor is occasioned by this condition. The tumor in its growth may also cause serious accidents from compression of the gravid uterus, or by torsion of the pedicle an effusion of blood may take place into the interior of the cyst, or into the abdominal cavity, with peritonitis or gangrene of the wall of the cyst. A rapid, malignant degeneration of the tumor may also be occasioned by the influence of pregnancy. But if all has gone well until term, the danger is not yet past, for the tumor may, from its position, offer an insurmountable obstacle to the expulsion of the fœtus, may cause rupture of the uterus, or torsion of the pedicle may be produced during labor.

Cases are on record where a patient having an ovarian tumor has gone through several pregnancies without especial inconvenience, but such cases are very rare.

Even if labor has been safely ended, the presence of an ovarian tumor may cause serious danger during the puerperium from peritonitis due to adhesions, torsion, or retention of lochia from obstruction of the uterus.

G. Jetter (Ueber den Einfluss der Eierstockgeschwulste auf Conception, Schwangerschaft, Geburt und Wochenbett. In. Diss. Tübingen, 1861) reports 165 cases of ovarian tumor complicating 215 labors. Result unknown in 11 cases, fatal in 64 cases, or a maternal mortality of 49.5 per cent.

W. S. Playfair (On the Treatment of Labor Complicated by Ovarian Tumor. Obstetrical Transactions of London, Vol. ix., p. 69) reports 57 labors complicated by tumors, with 23 deaths, a maternal mortality of 40.3 per cent.

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On the question of mortality among the children: Of 216 cases reported, 53 children were dead, 81 living, and from 64 no record was to be found. Miscarriage resulted in 21 cases. These statistics show the mortality to be not less than 47.7 per cent.

Prompt extirpation of an ovarian tumor is indicated in ordinary cases. When complicated with pregnancy, however, different methods are recommended: (1) Induction of abortion or premature labor. (2) Puncture of cyst, or (3) Radical extirpation.

1. Induction of abortion or premature labor results in the majority of cases in the death of the child; and the danger to the mother is often serious.

2. The success of puncture of the cyst depends upon its location, whether it be multilocular or unilocular; whether the contents be fluid, solid, or purulent. Puncture is also attended by the risk of septic infection of the peritoneal cavity, of hemorrhage from large vessels in the abdominal or cyst wall, or of injury to the bladder or intestines. Besides this the cyst might fill again. The evacuation of the contents of the cyst does not necessarily obviate the necessity of the induction of premature labor or abortion.

3. Operative treatment, extirpation of the cyst, even during pregnancy, is becoming more and more not only a recognized method of treatment, but one to be recommended.

Experience has shown that the danger from ovariotomy during pregnancy is not greater than at other times. The number of ovariotomies during pregnancy on record is not great. In 1877 R. Olshausen (Die Krankheiten der Ovarien. Stuttgart, 1877, p. 108. Billroth's Handb. d. Frauenkrankheiten Bd. ii. and Krankheiten der Ovarien, Bitha-Billroth Handb. d. Frauenkrankheiten 2 Aufl. Bd. 2, p. 399) could find only fourteen cases; but in 1886, in the last edition of his great work, he has eighty-two cases reported by forty-four operators. Those who have performed this operation most frequently are Olshausen eight cases, Sir Spencer Wells ten (Ovarian and Uterine Tumor, London, 1887), Lawson Tait eleven (The Pathology and Treatment of Diseases of the Ovaries, Fourth Edition, Birmingham, 1883), and Carl Schrœder twelve (Die Laparotomie in der Schwangerschaft. Zeitsch. f. Geburtsh. u. Gynäk. Bd. v.) I have done the opera-

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tion seven times in private practice and in the public hospital of Helsingfors.

1. Cyst of right ovary, in fourth month of pregnancy. Operation December 4th, 1884. On May 25th, 1885, patient was delivered, after a normal labor, of a living female child weighing eight pounds.

2. Cyst of right ovary, in second month of pregnancy. Operation January 29th, 1885. On October 28th, 1885, patient was delivered, after a normal labor, of a living male child twelve pounds in weight.

3. Cyst of left parovarium, in second month of pregnancy. Operation February 17th, 1887. On March 28th patient miscarried at three months.

4. Dermoid cyst of right ovary, in third month of pregnancy. Operation December 7th, 1887. On July 15th patient was delivered, after a very rapid and normal labor, of a living female child weighing nine pounds.

5. Dermoid cyst of right ovary, in fourth month of pregnancy. Operation December 12th, 1888. On June 25th, 1889, patient was delivered, after a normal labor, of a living female child weighing nine pounds.

6. Cyst of left ovary, in seventh month of pregnancy. Operation December 11th, 1888. On March 18th, 1889, patient, after a normal labor, was delivered of a living male child.

7. Cyst of left ovary, in seventh month of pregnancy. Operation April 18th, 1889. On July 20th, 1889, patient was delivered of a living male child weighing eight pounds.

Besides these seven cases two more have been reported in this city. One by J. Pippinsköld, in which he operated in the tenth month, or at the beginning of labor, and one by G. Henricius, early in pregnancy; both with good results.

Of the eighty-two operations reported by Olshausen, seventy-four were successful, a mortality of 9.75 per cent. Several of the fatal cases occurred in pre-antiseptic times. In one case the uterus was punctured instead of the cyst, and in one the patient was in the article of death at the time of operation. The high percentage may thus be accounted for by circumstances now avoidable.

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In the forty-one ovariotomies by Lawson Tait, Olshausen, Schröder and Spencer Wells only two deaths resulted. My seven operations were all successful.

		DEATHS.	
Schröder	12 Ovariotomes	0	
Lawson Tait	11 Ovariotomes	1	
Spencer Wells	10 Ovariotomes	1	
Olshausen	8 Ovariotomes	0	
Engström	7 Ovariotomes	0	
Total	48	2	Mortality 4.16 per cent.

These results confirm the statement that ovariotomy during pregnancy is attended by no greater danger than when the operation is uncomplicated.

I make the incision immediately above the umbilicus. If the tumor is situated high up it is always rational, as suggested by Larrivé (Archives de Tocologie vii., 1880, p. 607), to make the incision, as far as possible, at the level of the tumor.

Tension on the pedicle is liable to cause uterine contractions. The ligature around the pedicle should therefore be passed with extreme care, so as to avoid this occurrence, which might relax the ligatures or make them slip.

The wound should be united with care, so that it may not be reopened by action of the abdominal muscles.

The gravid uterus should be exposed for as short a time as possible during the operation. Chill predisposes to uterine contractions. I have been accustomed to protect the abdomen over the uterus by sponges wrung out of a tepid solution of phenol.

The patient should wear an abdominal bandage for several months after the operation.

When labor has set in immediately after the operation it has resulted most satisfactorily for the mother. All my cases had normal labors.

The fœtal mortality due to this complication of pregnancy has been considerable, whether the pregnancy has been interrupted before or during viability.

Operations upon the generative tract in pregnancy are apt to cause miscarriage, but experience has shown us that, in the

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majority of cases, ovariotomy in pregnancy does not cause premature labor.

Olshausen states that premature labor occurred in twenty per cent. of the cases, but these must include the cases in which the gravid uterus was punctured. In my case which miscarried, five weeks after the operation, a bilateral laceration of the cervix uteri was the probable cause. To prevent possible uterine contractions I administer opium per rectum, in doubtful cases.

Whether the danger of premature labor is or is not diminished by the operation, the prognosis as regards the fœtus is far better than under expectant treatment.

Comparing the statistics of Jetter and Olshausen, we see that the fœtal mortality is as forty-eight to twenty per cent. If we take into account the usual percentage of still births, the fœtal mortality will be seen to be still further lessened.

Does ovariotomy give equally good results in all stages of pregnancy? Wilson states that after the fifth month the prognosis is progressively worse, but there are not enough cases on record to warrant this statement. Schröder says that during the growth of the gravid uterus the pedicle of the tumor shortens, on account of the participation of the lamellæ of the broad ligament in the formation of the serous coat of the tumor. During the tying of the pedicle the ligatures should be applied near the uterus.

Most modern accoucheurs think that ovarian tumors should be extirpated even during pregnancy, and as soon as possible. The small size of a tumor is not a contra-indication of the operation, *for torsion of the pedicle is most common in small tumors.* Carl Schröder (Handb. d. Krankheiten d. weibl. Geschlechtsorgane. 4 Aufl. Leipzig, 1879, p. 393) was one of the first to insist upon the extirpation of ovarian tumors even during pregnancy. However, a great many think with Kœberle (Ovariotomie, Nouveau Dictionnaire de Medicine et de Chirurgie Pratiques, et Bulletin gen. de Therap, 1878, 15 Mai.) that *the operation ought to be postponed whenever possible until after pregnancy.* Even at this time some accoucheurs reserve their opinions in this regard. Emmet (Principles and Practice of Gynæcology. London, 1880, p. 827) states: "As a *general rule* an ovarian tumor should not be removed *if early pregnancy co-exists.*" L. de Sinéty

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(Traité pratique de Gynecologie et des Maladies des Femmes, Deux. Ed., Paris, 1884, p. 746) says *that ovariotomy is not* absolutely contra-indicated by the condition of pregnancy.

However, cases are met with in which the extirpation of a tumor during pregnancy is difficult if not *impossible. For instance, when the tumor fills more or less completely the pelvis minor* and when the uterus *has already developed to a considerable extent,* it would then be difficult or impossible to *remove the tumor from the pelvis and extirpate it in the usual manner.* In a case of this *kind I was obliged to induce premature labor at seven months, and soon after to extirpate the tumor, which occupied the greater part of the lesser pelvis.*

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Editorial.

THE NEWBERRY LIBRARY.

A very urgent want of the medical profession in Chicago is being met in a most gratifying manner and on a very liberal scale by the establishment of a medical department in the Newberry Library. Heretofore, there was available for the medical man no chance for extended reference upon any given subject in which he might be interested, but now he can find at his service the files of all the important medical journals of the world and a fair and rapidly growing collection of books. It is not unreasonable to say that in ten years at the present rate of growth Chicago will have in this institution the finest medical library in this country, and it is doubtful if it will be, except in historical value, second to any in Europe. The cordial reception of a large body of the profession last month by the Trustees and their liberal offer to secure any works or periodicals properly recommended, with the display of their present accomplishment, marks, it is trusted, a red letter-day in the medical history of Chicago. It is most desirable that the Trustees of this noble bequest receive the moral and enthusiastic support of the profession, and in no way can this be so well testified as in utilizing the library so generously provided. It is open from nine A. M. to ten P. M. with every facility and convenience for employing its resources. A report of the kindly expressions of its officers appears elsewhere.

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Society Proceedings.

THE CHICAGO MEDICAL SOCIETY.

Regular meeting, June 1st, 1891.

The meeting was called to order by President BROWER.

The minutes of the preceding meeting were read and approved.

The Committee on Membership reported favorably on the applications of Drs. D. R. MacMartin, Nicholas Senn, Jno. D. Ware, Jno. M. Dodson, Carl Beck, A. G. Haerther, Morris R. Weidner, C. B. H. Hanacy, Henry C. Welcker, L. J. Pritzker, Ethan A. Gray and Henry E. Vreeland, and on motion they were elected by acclamation.

The applications of Drs. R. H. Sturgeon, L. H. Mettler, Chas. E. Paddock, R. E. Miller and L. Skelton were read and referred to the Committee on Membership.

At the invitation of the trustees of the Newberry Library, on motion it was decided to hold the next meeting of the Society at the Newberry Library.

Dr. E. FLETCHER INGALS read a paper on "The Effects of Influenza on the Air Passages." (See page 409.)

Dr. F. C. HOTZ read a paper on "The Effects of Influenza on the Eye and Ear." (See page 413.) The paper was illustrated by cuts and drawings.

Dr. ARCHIBALD CHURCH read a paper entitled "La Grippe in its Effects on the Nervous System." (See page 418.)

Dr. SKELTON read a paper by Dr. I. N. DANFORTH on "La Grippe in its Relations to the Renal Functions." (See page 427.)

The foregoing papers were then discussed.

Dr. N. S. DAVIS: The papers which have been read have proved one thing pretty clearly; that is, that the disease which has been denominated the grippe, or epidemic influenza, is not local in its character and is not a result of causes that act merely locally. You may say that it is a germ disease, and that the

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germs enter through the air passages. It is easy to assume this, and I am not going to dispute it, but have seen no proof of it. I am not at all opposed to giving it a germ origin, but it is generally and truly said that the phenomena of the disease are such as may be likened to the action of some virulent ptomaine that gains access to the blood and makes its impression there, and develops inflammatory conditions of the renal, the respiratory, the digestive organs and the nervous system. This usually runs its course in a brief period of time. I have been very much interested in watching the progress of this disease as it appeared in 1890, culminating in January very suddenly with us, and culminating almost simultaneously on the same parallels of latitude in Europe and America. But this year its appearance has been different. The first we know, it is in the South, in New Orleans in January, and we hardly had anything of it here at that time, but bye and bye it comes down upon us, not in January, as it did the year before, but in March, and it comes like an avalanche and swells our mortality list until people are frightened. It then turns around and goes to New York and appears there two or three weeks later than in Chicago. So it moves in various ways in different years, which has been its characteristic throughout all of its past history. One epidemic is described as being six months in going from the north of Europe far enough south to reach Berlin, or the central part of Germany, and another epidemic spread so rapidly that from its appearance on the borders of the Mediterranean it swept over the whole of Europe in six weeks or less.

I have tried to study the meteorological conditions before, during and after the time of each epidemic, to see if I could detect anything that would explain the possible production of a ptomaine capable of pervading the atmosphere. In studying the meteorological conditions in connection with it, my friend Dr. Baker, of the Michigan Board of Health, claims to have ferreted out its cause. He claims that it is a germ disease, and to enable the germ to act, there must be the influence of cold and violent winds and an abundance of ozone, which by irritating the air passages favors the entrance of the germs and their active propagation. This is a beautiful theory, but when I came to study it in Chicago to find where the cold air and the violent winds and

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the ozone are, I discovered that in the two months preceding the onslaught of the grippe in 1890 the prevailing winds were from the southwest, and instead of being cold, it was proverbial all over the United States, and recorded from official sources at Washington, that the mean temperature for those two months was from six to ten degrees above the average mean for a series of years, and with southwest winds direct from the prairies. That is not the direction from which we get ozone; for ozone we want a good north breeze sweeping over the lakes. But here was the grippe unheralded by cold winds, and right in the midst of a preceding average temperature higher than normal. How was it in 1891? January and February were both above the average mean, with prevailing southwest winds. It was not until away in March, when the grippe was at its full height of development and destructive effects, that we got cold north winds.

It seems to me we should look beyond the mere hour when a disease makes its appearance. If you will look back to the summer of 1889, you will find that there was the beginning of a rise of summer temperature above the average, which caused in July an unusual amount of diarrhea and an unusual number of sun-strokes. Now take the next summer, and there was, in the latter part of June and first half of July, one of the most extraordinary seasons of high heat, and the cases of sun-stroke were double what they were the summer before; and there was an unusual amount of mortality from bowel diseases. In the winter there were four deaths recorded from the grippe in January, 1891; in February six, and in March one hundred and fifty-five, and in the next month there was a rapid diminution just as the year before. But we have been passing through a series of atmospheric conditions that have influenced most of the important inflammatory diseases in an extraordinary manner. Take the first three months of 1889, it was just about an average healthy season, the average temperature of January being 24°, February 19°, March 36°. The winds for January were south-west, for February west, and for March north-east and west. That was an average winter with plenty of cold winds and storms, and we had recorded three hundred and eighty-four deaths from pneumonia during these three months: *i. e.*, one hundred and twenty-eight in January, one hundred and eleven in February, and one hun-

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dred and forty-five in March; no grippe and no unusual mortality in general diseases. In the same three months of 1890, we have in January instead of the average temperature of 28°, almost 31°; in February, instead of 19°, 32°; in March an average of 29°. During January and February the prevailing winds were south-west or from the prairie; in March, the latter half, there were decidedly north-west winds. Pneumonia is a fair indication of nearly all the inflammatory diseases; and in the first three months of 1889, there were three hundred and eighty-four deaths from pneumonia, and in the first three months of 1890, there were one thousand and ninety-six; and added to that during these three months were one hundred and eight deaths from grippe—sixty-four in January, thirty-seven in February, and seven in March. In the first three months of 1891, there was an average temperature in January of 30°, February 28°, and March 30°, with south-west winds up to the middle of March. And the deaths from pneumonia were in January two hundred and eighty, in February two hundred and thirty-three, in March seven hundred and twenty, making an aggregate of one thousand two hundred and thirty-three during these three months of 1891. In January there were four deaths from the grippe, in February six, and in March one hundred and fifty-five. You will find not only here, but in all the places where it has prevailed, that there has been an increase of almost every form of inflammatory affection. I think it has also induced a profound impairment of the vaso-motor, respiratory and cardiac nervous functions, rendering it difficult for patients to recover a healthy tone of these organs.

One word in regard to the treatment of this disease. There is a period of high fever, great nervous irritation, pain and distress, but that passes in a little while, and it has seemed to me that by giving our patients large doses of anti-pyretics or quinine, we are in danger of adding to the general depression and protracting their sickness. I have seen patients relieved almost like magic by giving them a very simple laxative, such as would move off the bowels in the course of twenty-four hours; perhaps two or three grains of calomel with bi-carbonate of soda, or its equivalent, and let the patient take a single drop of reliable tincture of aconite every hour until you have developed its sedative effect, and in twenty-four hours the skin becomes

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moist, the pulse quiet, and the patient is more free from fever, and a few days of rest completes the recovery. I have found two remedies which have given me much satisfaction when patients are in a state of extreme depression. In such cases the best tonic I have been able to use is a combination of chloride of gold and sodium with extract of coca, extract of nux vomica and hyoscyamus, to be given three times a day. This has seemed in some of the cases to produce a remarkably tonic effect. The other prescription that has seemed to me to act as a good tonic, contains a combination of equal parts of the compound tincture of cinchona and compound syrup of hypophosphites with just enough bichloride of mercury to give about one-thirtieth of a grain to each full teaspoonful, to be taken three or four times a day.

Dr. WILLIAM E. QUINE: I wish to direct attention to a phase of the variegated disease, designated the grippe, which seems to me to be deserving of more attention than it generally receives, and that is the extraordinary dissimilarity of the types of the disease appearing in the year 1890 and the current year. So far as examples of the malady have come under my own observation, those which occurred in 1890 were so different in their striking manifestations from those which occurred during this year as to justify a suspicion that we are dealing with, if not entirely different diseases, very widely differing phases of the same type or general variety of morbid action. The influenza epidemic of the year 1890 was characterized prominently by rheumatoid and myalgic pains, in some instances by actual attacks of articular rheumatism and associated cardiac disease; characterized also by well-marked coryza, by well-marked bronchial catarrh, and by the frequent occurrence of catarrhal pneumonia. Contrast the disease in which these various manifestations were the prominent and true symptoms with the disease which we have so recently studied, and remember in relation to the latter that rheumatoid manifestations were for the most part entirely absent, coryza was not a prominent feature of the complaint in any sense, the degree of severity of bronchial and pulmonary disturbances was not to be compared with that of the year before. And now if we direct attention to the fact that during the recent epidemic the gastro-intestinal disturbance was the prominent element of a large proportion of the cases, it seems to me that we have con-

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fronting us an array of facts which are not to be explained upon the basis of idiosyncracy, is not to be explained upon the basis of parts of the least resistance, but rather that we have to do with types or phases of a disease of an essentially different character. The epidemic through which we have just passed, marked as it has been by disturbances of the stomach, by the extraordinary frequency and severity of colitis or colo-rectitis, presents in this a phase which did not appear to any prominent extent in the epidemic of the year 1890.

The secondary infections incident to the disease were different in the one year from that of the other. Consecutively to the epidemic of grippe, or concurrently with it, in the year 1890, cerebro-spinal meningitis was an extraordinarily common and fatal disorder. Secondary suppurative process as empyema and suppurative process affecting the bones and other structures of the body were likewise common in the late winter and early spring months of the year 1890. They have been exceedingly uncommon in relation to the sequelæ of the epidemic through which we have just passed. Instead of the secondary affections which attended or followed the epidemic of 1890, we have in relation to that of 1891 such prevalence of typhoid fever as has rarely, if ever, been equaled for the season of the year in this or in any other section of the country, and the prevalence of typhoid fever does not relate to the local conditions. The disease, if I am correctly informed, has been wide-spread; almost as wide-spread as the epidemic of influenza itself. These points of difference between the epidemics of the one disease, as it is familiarly regarded, have not and do not receive such attention as their striking importance would warrant us in expecting.

I have made a memorandum relating to the influences of the infection, or the products of the infection, upon the physical apparatus of the body. It has doubtless occurred to all of you that the morbific matter which appears in the body during the progress of influenza exerts an influence upon the circulatory organs not like that which is exerted by ordinary medicine. The effects of sedative medicine are transitory in their character, and if those effects do not actually eventuate in the death of the patient as soon as the administration of the sedative is suspended, the circulatory organs regain their former condition of

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activity and functional capacity. It is not so in relation to the effects of the influenza virus; for the alkaloidal products of the infection produce upon the cardiac centers or structures, sometimes at least, a terrible affection. It apparently causes structural changes in those parts of the nervous system which dominate the functional capacity of the heart; so it is not uncommon to find an individual who suffered from the grippe in 1890 still presenting a pulse rate varying from forty to sixty beats per minute, in an enfeebled general condition, and with very strong syncopic tendencies.

Dr. J. H. HOLLISTER: There are two or three conclusions at which I have arrived in the study of la grippe. The first is, that it presents certain characteristics which seem to be specific. I believe it is entitled to a position differentiated from all other diseases, and epidemic in its character. This question also follows: Is it likely to become endemic? Another very interesting question is suggested: To what degree and in what manner it will influence and modify other diseases which may follow in its train. Dr. Quine's observation, similar to my own, has been that there has been such a difference as to almost warrant a supposition of the presence of two separate diseases during the last two years, that of 1890 principally affecting the various mucous membranes, that of the present year markedly involving the nervous system, enfeebling it, impairing its varied actions, and producing the neuroses spoken of to-night. With me there has been a series of affections which I am studying with a great deal of interest, in which there is an involvment of the gastro-enteric viscera and more or less of gastro-enteritis. The number of patients who are now crowding the hospital of which I have charge, affected with this form of disease, has, I think, never had a parallel. I find that in at least three-fourths of the cases which are called typhoid fever, diarrhœa is commonly present, and subacute enteritis continues; that the specific ulceration of the glands and the characteristic stages and symptoms of typhoid fever are absent, but instead there is a form of continued fever running from five to fifteen days with high temperature and without intermissions. I believe that emaciation and destruction of tissue is a prominent characteristic of this disease, and this failure of nutrition will account for that condition of exhaustion which is so

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constantly referred to by our pathologists. In regard to the influence which may be brought to bear through remedial agents, I think we have all reached the conclusion that those remedies which are at all depressing to the nervous energies should be withheld, and that we should conserve the vital forces in every way possible. In several cases my purpose has been, for the first two or three days, to allay excessive nervous excitement, and then in various ways to promptly and continuously support the vital powers. I think this disease is rightly named the grippe, not so much because of the way in which it takes hold of a man, as the way in which it don't let go. An experience of twenty days in bed this year from this disease, enables me to speak from experience.

Dr. J. S. KNOX: The ground seems to have been very thoroughly covered. What I was going to say I will condense into two suggestions. One is, the severity with which the grippe attacked old age with fatal results and the great immunity of children; the other was the close resemblance of some forms of la grippe to septic fever. I rarely saw children sick with the grippe. My impression is that old age suffered so fatally from the disease on account of diminished and failing powers of elimination, and children escaped so fully from this epidemic because their eliminating organs are so healthy. In the treatment of grippe I have succeeded best in aged people where the history of organic function was good and where I could get the bowels and kidneys to fulfill their duties of elimination; but where there was deficient kidney or defective secretion, even in those not old in years but in decay, they yielded to the sickness. The same was true in children. Those cases only died under my care that had some hereditary taint or organic disease. The grippe resembles septic fever in its sudden onset, its variable and changing temperature, its critical sweats, its sleeplessness and its running into a protracted diarrhœa with severe colicky symptoms. With this idea in mind, the treatment of septic fever seems to succeed with this form of the grippe. My belief is that it was a microbic disease, and I found the solutions of bichloride and of other germicides act admirably in controlling this form.

Dr. CURTIS FENN: I had the grippe last year, but didn't take a drop of medicine, and had it again this year. I was affected by blindness and have had extreme weakness of the heart, and

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have had all sorts of muscular pains with a great deal of muscular prostration which makes even the holding of the pen a burden. I have found the treatment of the grippe an easy matter. It is certain that the irritability of the heart must be repressed, and I think that gelsemium is an excellent remedy, one drop an hour for sixteen or eighteen hours, and some form of anti-rheumatic, as salicylic acid, followed by the ferrated forms of tonic combined with cinchona.

Dr. W. F. COLEMAN: I wish to relate one case, which confirms the view of Dr. Quine in regard to the suppurative ulcers which occurred in la grippe in the spring of last year. It was a case of suppuration of the left eye and general ophthalmitis following an attack of the grippe. There was a temperature of 103½ degrees and a suppurative choroiditis which ruptured the eyeball and produced blindness. It was unilateral, and we find many such exceptions to infections being generalized. The case also confirms the view of Dr. Knox in regard to the infectious nature of la grippe. Suppurative choroiditis occurring in puerperal fever is known to be the result of infection and may be assumed to be so in our case of grippe.

Dr. C. W. EARLE: My experience in regard to children differs a little from that of Dr. Knox. There are two or three facts noticeable in the disease as occurring in children that I would like to speak of. I think there is no doubt in the world that these little people experience the same lassitude and weariness, the same extreme pain of the muscles as do adults. The temperature in children frequently went up to 104, and after a few days it appeared to me that there was catarrhal pneumonia in a number of cases. In two or three other cases there were symptoms of meningitis. Four children, whose history I cannot give at this time, succumbed to the disease, and I think all of them had symptoms referable to the nervous system, but it seemed to me that the disease did not attack the nervous system with the same severity that it did the respiratory apparatus. While these children had convulsions, the most of them died of catarrhal bronchitis and bronchial pneumonia. The length of time that these little people would remain in this prostrated condition, the great degree of exhaustion which they certainly evinced, the appearance of nervous symptoms which were soon supplanted

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by symptoms referable to the respiratory apparatus, were the points most noticeable.

Dr. J. C. HOAG: I had no thought of occupying the time of the Society until Dr. Church brought to mind some curious symptoms that were developed in an illness I recently had. On the 26th of February I left Chicago for a vacation, being at that time in good health, though much fatigued. After a pleasant excursion I returned on the 26th of March, and for several days was actively engaged in practice. On about the 4th of April I was aware that I had a considerable rise of temperature; the temperature continued to increase, and on the occasion of my presence here at the annual meeting I had a temperature of about 103 and felt rather uncomfortable. The next morning I decided to stay in bed and remained there for nearly three weeks. Early in the attack there was a peculiar and extremely aggravating symptom, which was very rapid breathing. Even as early as the first day of my illness in bed, breathing was as high as thirty-five per minute, and at the end of the second day I felt completely exhausted, simply from this rapid respiration; my pulse meanwhile was something like one hundred and thirty to the minute. Upon inquiry, after my convalescence, I found that my respirations ran for nearly ten days from thirty to sixty to the minute, and the pulse was between one hundred and twenty-five and one hundred and sixty. So exhausting was the breathing that I felt the effects for two weeks after the delirium had passed away. Dr. Billings, who saw me several times, expressed the opinion that the rapid breathing was due to a toxic influence upon the respiratory center, and this certainly seems to be a very rational explanation.

Dr. J. FRANK: I wish to speak of the influence of influenza on patients who were operated during this last epidemic and the previous one. In a number of major operations some of them had an attack of the influenza a few days after the operation and some during convalescence, but after the attack passed off, the patients seemed to do as well as if they had not had the influenza at all. It is my opinion that influenza has very little effect on surgical cases. In none of the cases that I have had, can I attribute death to it.

Dr. JACOB FRANK exhibited a patient with Raynaud's Disease.

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Dr. PYNCHON directed the attention of the Society to certain fradulent circulars advertising a proprietary remedy called Vin de Bugeaud, and offered the following resolution:

WHEREAS, The attention of this Society has been called to advertisements and circulars of certain proprietary articles and remedies in which is given what purports to be the recommendation and endorsement of a reputable medical society, by slightly modifying or changing the name of such society, and having attached to such certificate names fictitious or of parties deceased; and,

WHEREAS, Such misrepresentations are fraudulent and tantamount to forgeries; and,

WHEREAS, Discredit is cast upon the medical profession by the publication and distribution of such alleged certificates; and,

WHEREAS, Many may be unwisely influenced through such cause: therefore be it

Resolved, by this Society, That any such publication of fraudulent certificates be hereby denounced, and that the profession be warned against the employment of any article so advertised.

On motion this resolution was adopted by a unanimous vote.

An invitation was extended to the Society by Dr. G. Evans and Mr. J. A. Wessener to inspect microscopical preparations of the Plasmodium Bacillus at the Post-Graduate Medical School.

On motion permission was granted to incorporate Dr. Earle's remarks on the recent paper by Dr. Herrick, in the Society's transactions.

On motion the Society adjourned.

J. C. HOAG, *Secretary.*

Regular meeting, June 15th, 1891.

In response to an invitation from the Trustees of the Newberry Library a regular meeting was held in the assembly room of the Library. The purpose of this invitation was to give the members of the Society an opportunity to inspect the Library, particularly its medical department, and to make suggestions regarding its enlargement.

The meeting was called to order by President BROWER, who thanked the Trustees for their courtesy and then introduced Mr. E. W. BLATCHFORD, who welcomed the Society on behalf of the Trustees.

He said: Mr. President, and members of the Chicago Medical Society, I do not intend to occupy your time with extended

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remarks, but I wish, in behalf of my associate trustee, Mr. Wm. H. Bradley, and myself, to express the great gratification it affords us to have you meet here this evening. As you know, we have established a medical department, and we will be very glad to respond to whatever request you make for additions to that department. We have on our shelves now about three hundred medical periodicals, and we have in addition to that about forty which have been recommended to us, and which we are prepared to order just as soon as we get a report from the advisory committee of physicians which has been appointed. We are prepared to order the magazines which you wish, and to respond in every way to what you desire. Last year it occurred to us that we wanted the assistance and wisdom of medical men to advise us in regard to the books to be ordered; and after conferring with a number of physicians, we appointed a committee of seven, which was called our Medical Department Advisory Board. They now have in hand quite a list of books and periodicals, and as soon as they report favorably on all or a portion of them we will order them. There is one request that we have to make of each of you; that is, that you will advise us by postal card, or in any way you please, of any periodicals or medical works that are fit for a reference library that you would like to have here in Chicago, and we will certainly get them, unless we find that it is costing us too much. I appreciate the fact of the increasing importance of this city as a center of medical education. I received a letter a day or two ago from a prominent physician in the state of New York congratulating Chicago upon the possession of such a list of medical periodicals as we have now in the Newberry Library. All that we ask is that you will aid us in making this list of the best possible value to the medical profession of Chicago. Again, I bid you welcome.

Wm. F. Poole, LL.D., the librarian, was introduced and said: Mr. Blatchford has so fully and cordially welcomed you here to-night that there seems little for me to say on that subject. I know that the trustees take a very deep interest in this measure of establishing a medical department, and if you will give us time enough, we will have a library which will be a credit to Chicago, as a great center of medical instruction. I know some of you have been a little impatient that we have not got along faster.

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Everybody is impatient when a library is started; they have an idea that a library can be made as quickly as you can build a house. You can go out and buy lumber and brick, and have a house very soon; but you cannot build a library in that way. Libraries are of slow growth. The great British Museum which is now almost a wonder of the world had, within the memory of some of us who are present, a less number of books than are in the Chicago Public Library, and not one-tenth of the income. A library is something more than a collection of books —it is an organized collection of books with life and vitality in it. I am glad that you have met here to-night, for it is a pledge of more work and more interest. I believe that the members who are here will take more interest in the Newberry Library, and especially the medical department, than they have done, and that it will be a great stimulus to us.

The minutes of the preceding meeting were read and approved.

The Committee on Membership reported favorably on the applications of Drs. R. H. Sturgeon, L. Harrison Mettler and Charles E. Paddock, and on motion, the Secretary cast the ballot of the Society for their election.

The applications of Drs. S. C. Plummer and F. W. E. Henkel were read and referred to the Committee on Membership.

Papers on the subject of the "Summer Complaints of Children" were read as follows: "Etiology and Clinical History" by Dr. M. P. HATFIELD (see page 430); "Prophylaxis" by Dr. E. J. DOERING (see page 433); "Infant Feeding" by Dr. CHAS. W. EARLE (see page 439); In regard to treatment

Dr. J. S. KNOX said: I will invite your attention very briefly to the treatment of the summer diarrheas of children, which I will classify as first, acute indigestion; second, catarrhal indigestion; third, catarrhal diarrhea; fourth, thermal diarrhea; fifth, cholera infantum. I think we are all agreed that articles of food which agree thoroughly well with children, under ordinary circumstances, often become vicious and provoke acute attacks in the presence of hot weather.

ACUTE INDIGESTION. The first thing to do in this condition is to remove the offending cause. Therefore we should use emetics and rectal injections, followed by a purgative. The next indica-

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tion is to quiet the irritability of the digestive tract with local remedies and the withdrawal of all food. One thing must be borne in mind in acute attacks of bowel trouble, the horizontal position is important.

CATARRHAL INDIGESTION. This is an acute indigestion superadded to a catarrhal enteritis, gastritis, or entero-colitis. The first indication, of course, is to empty the alimentary tract by giving an emetic and good laxatives, and then to treat the chronic catarrhal condition. Such little patients are usually feeble, and cannot go long without nourishment. They must be fed, but the food must be adjusted to their digestive powers. Milk rarely agrees. Sterilized milk may be administered, but the child should be fed almost entirely upon broths. A cure is rarely ever accomplished in summer where an acute attack of indigestion is superadded to a chronic condition of indigestion. The child will have frequent attacks, and unless we are careful, will become marasmic. I look upon all chronic diseases as requiring tonics; I look upon all catarrhal conditions of the digestive tract as requiring astringents. I have scarcely ever found a babe that would not tolerate cod-liver oil.

CATARRHAL DIARRHEAS are extremely common in summer, and undoubtedly come from sudden exposure; a child, warm and perspiring, is chilled, and congestion of deeper organs follows. In infants the congestion is nearly always in the vessels of the digestive tract. We treat it exactly the same as a pulmonary congestion. After a warm bath try and re-establish the circulation of the skin. The child should be put at rest, all food withdrawn, and those remedies given which will equalize circulation.

THERMAL DIARRHEA. This attacks infants on extremely hot days. I have never found in any work on children's diseases an intelligent definition of thermal diarrhea. I do not pretend to define, I only know that the child's nervous system seems to have become irritable from exhaustion, there seems to be from the bowel and stomach an excessive oozing of serum, and there is not the slightest effort to absorb anything. Under such circumstances, large doses of stimulants, food, or medicine, pass unnoticed. There seems to be a prostration of the sympathetic nervous system. In these conditions you will find an extremely high temperature. Three years ago I got a temperature in the

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rectum of 111°. In such cases the first indication is to depress the temperature and stimulate. My management is to put these children in a cold bath, lower the temperature, then give hypodermics of alcohol or whisky, and minute doses of opium. The diarrhea and vomiting cease, the child falls asleep, and when nourishment is taken it will be retained. With an increase of temperature the attacks of excessive vomiting and diarrhea will return, until again relieved by lowering the temperature. So, in thermal diarrhea the general indication is to depress the temperature by baths, and stimulate and medicate hypodermically.

There is an acute diarrhea which we see occasionally, and which is commonly called CHOLERA INFANTUM. It exactly resembles thermal diarrhea, but has its origin in some microbic poison. The treatment of this acute, intense purging and vomiting of serum is best met by the administration of a decided antiseptic. The bichloride of mercury is, in my experience, the best in solution. In cases of septic poisoning of the alimentary tract it is astonishing how large a dose a child will tolerate. Finally, in chronic indigestion of these little children where acute attacks are brought on by fermentation, there is one drug I have found extremely efficient. Dr. Earle spoke of bismuth in ten, fifteen and twenty grain doses, but I prefer salicylate of soda. I think its effect in rendering sweet, so to speak, is far superior to bismuth. I think bismuth is quite inert, it is so thoroughly insoluble. In quieting the irritation of the bowel bismuth is more efficient than salol or the salicylate, but to render the bowel antiseptic the latter are far the best.

The discussion was formally opened by

Dr. EPHRAIM INGALS, with the following written remarks:

In the management of children during the summer months it is easier to keep out of trouble than to get out—a rule that holds good in most of the experiences of life. It is best not to let the children get sick. If the parents have both intelligence and money this is not difficult. If one of these factors be lacking it is better that it should be money, for the laws of health are simple and easily applied. The diseases of the digestive organs that are so fatal to children in summer are chiefly due to errors of diet, exposures to sudden changes of temperature, fatigue and the disturbance to the nervous system which is dependent on denti-

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tion. Excepting when dependent on the last of these they may generally be avoided. For most children there is no better food than milk from a healthy cow that is properly fed and cared for, and this milk is never more wholesome than when it comes fresh and sweet from the udder, unvexed and unimproved by the meddlesome hand of man. When will we learn to confide somewhat more than we do in the processes that nature in her long experience has proved to be best!

It is a common but erroneous belief that good milk cannot be produced in a city. The milk from a metropolitan cow may be as good, and I am inclined to think, may be better than from one that feeds on the pasture. In the meadow the cow is exposed to a wide and high range of temperature; to circumstances that heat the blood, as from the annoyance of other animals, flies, musquitoes, etc., from thirst that must often be slaked from the impure water of stagnant pools. This in marked contrast with the experiences of the well-fed and carefully groomed city cow, that rests happily in a comfortable stall year in and year out. She can have no harrowing cares, no disturbing emotions, and her reflections can only be those of peace and quietness. A varied diet can never result in uniform milk. The following examples will illustrate the great influence that different foods have on the lacteal secretion. When cows feed on the uncultivated prairies of a new country there is a period during the spring when neither the milk nor butter made from it can be eaten, because of its disagreeable taste. It is known that milk-sickness is caused by the herbage of the pasture, which imparts both to the milk and the flesh of animals that feed upon it properties that render them fatally poisonous if eaten by man. We often witness the deleterious effects communicated to the milk of nursing women by fatigue, by mental emotions, by heat, by improper food and by some medicines.

To produce good milk in a city, it is necessary, first, to be sure that the cow is perfectly healthy. Give her a commodious stall where she will breathe good air. She should be kept as clean as the coach horses. Be not less particular about her food than you would be in providing for your own table. She must have a good bed; her hay must be bright and sweet, and for ground feed I think oats and wheat-bran in varying proportions

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are best. She must have plenty of pure water and be milked at regular intervals by skillful hands. That the cow may secrete perfect milk it is no more necessary that she should be exercised than it is that the machinery that distils for us the Columbia pure water from Lake Michigan should be exercised. My cow does not leave her stall after she enters it until she goes to the shambles. You may think all this is not professionally ethical, but in the matter of keeping a cow in a city I speak with a confidence based on many years of experience.

Infants may digest cow's milk best when diluted with pure water, but as soon as they will bear it—and this is usually not later than the third or fourth month—give it undiluted. Allow children miscellaneous food as soon as they want, and can digest it. With this limitation children usually thrive best on what they crave. Do not stand sentry over every morsel they put in their mouths to tell them it will hurt them. Children managed as I have suggested will soon prefer a simple and wholesome diet.

Do not carry or race children all over Christendom with the purpose of giving them air and exercise. You cannot keep a child still in a straight-jacket, and they are not likely to suffer from muscular inaction. An infant cannot make its feelings of discomfort known, and an older child is easily led on by the excitement of an outing, to lay the foundations for serious sickness. Children should be guarded against sudden changes of temperature. They should be lightly clad during the heat of the day, with changes of apparel for periods of cold and dampness. But for a large percentage of the children of a city, the lack of intelligent parents, of sanitary homes of comfort and convenience, makes a great deal of sickness inevitable. For these we must do as well as we can. We must instruct the parents; inspect their homes and point out sanitary defects when found. We must advise them about their food, and the management of their children; we must give them medicines when it will do good, but we often earn our fee best in some other way.

If dentition is the cause of the sickness nothing is more beneficial than the free cutting of the gums, the administration of an opiate if there is pain, and of bromide of potassium when convulsions threaten. The diarrheas of children are generally best treated by laxatives, and for this purpose there is no better medi-

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cine in the class than castor oil. With laxatives opiates should be used if there is pain, and tonics are generally beneficial. If with laxatives we cannot entirely remove the offending substances from the bowels, something may be hoped from disinfectants, such as calomel, salol and the like. We should be careful to eliminate from the diet of children all over-ripe fruit and vegetables that are hastening to decay. When the digestive organs are at fault a very limited diet is always best, and for adults as well as for children. It is not what is taken into the stomach that gives health and strength, but what is elaborated and taken up by the nutrient vessels. If it remains in the bowels in a state of fermentation and decomposition it is only an agent of discomfort and danger.

Let us learn of the animals, for with them we are brothers and fellow-participants in the experiences of life. The camel has his hump for consumption when nutrition cannot otherwise be obtained, the squirrel stores his house with nuts against the famine of winter, and for this the provident bee fills its cells. Nature does the same for us, and when the stomach is in health it augments the system with redundant tissues for us to feed upon when sickness comes. When health is again restored to the digestive organs it is a delight to see with what ardor they will replenish this lacking material consumed during a period of sickness. We need not be disturbed by the atrophy of sickness, provided the disease can be arrested so that the nutritive organs may again resume their activity.

Dr. A. H. Foster: I am interested in infant feeding, but unfortunately did not hear that part of the programme. Some remarks in regard to poor milk and some of the criticisms on sterilized milk I did hear. All will agree that it is difficult to obtain pure milk in the city. I have had the experience of recommending a cow fresh and good, pure and clean, for an infant, and then had to insist upon changing cows four or five times, and finally have been surprised at the successful result; there was a difference in the susceptibility of the infant to the milk of the different cows.

Speaking of wet nurses, I have had five or six at the same time in separate families, and while some families experienced all the discomforts Dr. Ingals has alluded to, I am quite sure these

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wet nurses were the sole salvation of the infants in hand. In my experience sterilized milk has helped us decidedly. We cannot get fresh, pure milk. With the best milk procurable we have managed to get along without wet nurses, where in many cases we should have had to resort to them had it not been for the sterilized milk. In all probability the very fact that the attendant has to take such pains in sterilizing the milk leads to better care of the infant. If we are very particular in one respect it causes us to be particular in other respects. I remember very distinctly when this subject was before the Chicago Medical Society several years ago, that Dr. Ingals made a remark which fastened itself upon my mind. He said he believed that any child could be adapted to almost any reasonable food, if it was persisted in with sense and care. I think that is very true, but when we who have years enough have seen very delicate, puny children, who were brought up by hand, arrive at an age where they marry and have children who have to be brought up with two hands, see what a problem there is before us. I think that some of us who are practicing among these delicate children, who are saved by the skin of their teeth, have a great deal to contend with. In the lower classes of the community all who cannot live, die. There is a survival of the fittest. All that can go through fire and water live. But with the class we have to attend, whose fathers and mothers are so frail, we meet such delicate organisms that it is almost impossible to keep them alive without resort to the most delicate and persistent care possible.

Dr. A. E. Hoadley: To the most prominent feature of Dr. Hatfield's paper I wish to take exception. I am one of those who do not believe in the theory of malaria in the city; I do not think the gases nor the organisms that float in the atmosphere are particularly detrimental to humanity. Not to the extent of producing those restless nights, with copious vomiting and diarrhea. Those little children suffering from such malaria usually have a high temperature; they have soggy clothes and a big flannel belly-band. If these are removed and the temperature reduced to the normal by the application of warm water, the child will go to sleep without vomiting, and wake up as bright as a dollar in the morning, in spite of the malaria.

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Physiology teaches that we cannot appropriate anything until it has undergone a chemical solution, except common salt and water; all other articles of diet have to be digested. In regard to Dr. Earle's barley water, rice water, cracker water, and toast water, these are simply solutions of starch; and babies before the first dentition have no salivary glands to amount to anything, produce no ptyalin, and the starch must remain in the stomach during the digestion of the albumenoids, and then pass out into the intestines to undergo fermentation. That is one of the reasons why we have diarrhea in infants. Mother's milk has no starch in it; and no young animal is fed on starchy food except birds.

Condensed milk is condensed four in one, and the balance filled up with sugar of milk; and, as Dr. Earle correctly stated, children cannot get along with the average feeding of condensed milk. There is not food variety enough; it should be mixed with other diet. It requires just as much chemical work to convert the sugar of milk as it does starch; and it cannot be appropriated until it is converted. Dr. Earle also speaks of a preference for one cow's milk, as did Dr. Ingals. Some years ago I prepared a paper upon infant feeding, in which my great effort was to have sufficient time between feeding, and I condemned emphatically the one cow's milk. I looked all around the north-western part of the city for an ideal cow, like Dr. Ingals speaks of, but I did not find one. I visited perhaps one hundred cows, and they were kept in all sorts of places, fed the rubbish from the house, sour and sweet, as it came along. They were covered with manure up to their shoulders, and when they came out in the spring the hair came off with the manure. That is the kind of one cow's milk we get, when we order it for patients. I prefer to have milk from a hundred cows. It is more uniform, less likely to be impure, and can be obtained without trouble of very good average quality, and in my opinion is far safer.

Dr. GEORGE W. WEBSTER: There are two points I would like to mention in the discussion of these papers. One, which is as important to my mind as any, is absolute regularity in feeding. I care not whether the child be given mother's milk, or a wet nurse's milk, or one cow's milk or a hundred; if not given at absolutely regular intervals, and the quantity proportioned to the

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age and condition of the child, that child cannot under any circumstances thrive.

A word in regard to the sterilization of milk. It has been shown conclusively that milk to be sterilized must be heated to the temperature of steam, and that the ordinary boiling of milk, even for five or ten minutes, is not sufficient. Milk heated to this degree will afterwards undergo fermentation within a comparatively short time. It is necessary that the bottles should be placed in steam; and to be completely sterilized, must remain in that steam forty minutes. Chemists tell us that the proteides in cow's milk are approximately double what they are in mother's milk. We all know that double the normal quantity of proteides cannot be appropriated by the little ones without loss. That is, there is a useless expenditure of energy in appropriating this unnecessary amount. Therefore, the first thing to be done is to approximate the normal quantity of proteides. This can only be done by adding water. It has been stated to-night that there is no starch in mother's milk. But there is a soluble carbo-hydrate, the sugar of milk, and this may be called the fuel food of the baby. We know quite well that the commercial sugar of milk in its physiological action is not, in any way, like the sugar of mothers' milk; the former, as has been shown conclusively, can be kept for six months in open tubes without undergoing any changes. Commercial sugar of milk is of no value in feeding little children. They should have some carbo-hydrate to replace what we have diluted in the cow's milk. What shall it be? We have the ordinary grape sugar, cane sugar and the milk sugar, as well as multose and dextrin, and we must select one of these if we wish the child properly nourished. Dextrin or multose is probably the most suitable, because it is partially digested and does not undergo fermentation readily.

One word in regard to this sanitarium. It is my experience that it is one of the grandest institutions that has ever been started in this city. There is no doubt at all that the mothers and the children come home in a far better condition after having had three, four or five hours of complete rest. It is better for the mother; it is better for her child.

Dr. ROSA ENGLEMAN: I have nothing to add except that I believe this sanitarium is a very good place to send these

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children. Their homes are certainly very unsanitary. The fresh air and treatment they get at this sanitarium are preferable to the homes of many poor people.

Dr. J. J. M. ANGEAR: There is a histological fact that will help us in our pathology of increased temperature, as cause of diarrhea. If we take ordinary ciliated cells and place them under a microscope, we shall recognize their vitality and activity by the movement of their cilia. If we bring heat to bear upon them so that they can realize it, there is an increased activity in these cells. If we continue that heat for a length of time, or increase the quantity, the cells die. Would it not be the part of wisdom for us to carry this histological fact over into our pathology, and recognize the fact that the increased heat of summer is killing cells, and breaking down the tissues of the child? Again, we know that dead matter, if retained in the body, is poisonous. It stimulates and excites all the emunctories so that we have an over-stimulated and irritated alimentary canal; for there are emunctories there in abundance, more particularly in the large intestines. These glands are simply throwing out effete matter which gives color and odor to the feces; it is merely the debris of the tissue. We have heat destroying cells, the dead cells stimulating the emunctories, and the glands throwing out the dead matter into the alimentary canal, and diarrhea is the result.

I was glad to hear several speak plainly about starch. It is detrimental, and I do not know of an authority, either in the line of physiology or treatment of the diseases of children, but what tells us positively that starch is injurious until there are manifestations of saliva; and saliva is not found in the mouth of a child until it is three months of age.

In regard to the sterilization of milk, if it is necessary for us to sterilize milk, it is necessary to reject that article entirely; this is the best plan. The souring of milk is simply converting sugar of milk into lactic acid, which aids digestion greatly, and is caused by bacillus acidi lactici. If the stomach is not capable of causing the milk to curdle and become sour, then the milk will do mischief. That souring is the first process of ordinary digestion. If there are any other microbes present in the milk, we had better reject it and save the trouble and the expense of sterilization.

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Dr. M. P. Hatfield said: I have simply this to say in reply to Dr. Hoadley, that if he will admit that a child may be poisoned by the emanations from soiled clothes and filthy surroundings, he has described what was meant by malaria, because I was careful to define the word as not meaning intermittent poison solely.

Dr. J. S. Knox: In regard to the statement of Dr. Ingals, that he preferred the use of calomel to the use of bichloride of mercury as a disinfectant of the bowel, I believe most heartily in the use of calomel in infants as a purgative, but I never yet succeeded in producing disinfection with minute doses of it. It is too purgative. The bichloride of mercury can be given in repeated doses without disturbing the bowel.

Dr. Ephraim Ingals: I only wish to say a word to correct the impression that I seem to have given. I did not mean to convey the impression that I did not entirely approve of the fresh air provision for these children. I was only referring to those who had to go away across the city to this sanitarium; I believe they would be better off in the parks nearer their homes. I think the effect of this long ride in many cases does more harm than good.

Dr. E. J. Doering moved that a committee be appointed to confer with the Health Commissioner with regard to the establishment of a system of milk inspection, as well as other matters of importance regarding public sanitation.

Dr. J. R. Brandt called attention to the fact that a committee was appointed May 4th for a somewhat similar purpose, and might be charged with this additional duty. On motion the committee was instructed to attend to this important matter.

Dr. Brandt then informed the Society that large appropriations had recently been made by the authorities for the construction of a detention hospital for the insane, a ward for the reception of contagious diseases, and a morgue.

A New Instrument

Dr. E. F. Wells exhibited a stethoscopic percussor. He said: I desire to call the attention of the profession to a stethoscopic percussor which I have employed in my practice for about eighteen months, and which I believe has a certain field of usefulness.

The instrument may be described as follows: Near the base

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of the medium sized bell of a Dennison's stethoscope is securely fastened a curved spring which passes through a slot in the bell at about one-half its height. To the free extremity of this spring is attached a hammer which thus hangs suspended within the bell, with its lower surface about one-eighth inch above a line drawn across the base of the bell. Fitted into the lower surface of the hammer, and projecting slightly, is a soft rubber plug which acts as the striking surface. The lower opening of the bell is closed by a thin hard-rubber obturator, against the inner surface of which the hammer strikes and the outer surface of which is applied to the thoracic wall. Near the point where the spring passes through the slot in the bell there is fastened upon its superior surface a small circular plate to which the strokes are applied when the instrument is being used. When this plate, or key, is forcibly struck the hammer descends against the obturator and is immediately withdrawn, upward and away from the obturator, by the action of the spring.

The advantages possessed by this percussor may be summarized as follows: (1) The resulting sound is clear-cut, sharp and distinct; (2) It is conveyed directly to the ears of the operator free from any extraneous sounds; and (3) The most important element of sound in percussion, namely, pitch, is so prominent that it can be better recognized than by any other means.

On motion the Society adjourned.

JUNIUS C. HOAG, *Secretary.*

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Reviews.

PRACTICAL NOTES ON URINARY ANALYSIS. By WILLIAM B. CANFIELD, A.M., M.D. Detroit: Geo. S. Davis, 1891. 12mo., pp. 94. 25 cents.

A practical little book that will be found of assistance to student and busy practitioner as a review of the subject or a working guide.

PRACTICAL POINTS IN THE MANAGEMENT OF SOME OF THE DISEASES OF CHILDREN. By I. N. LOVE, M.D. Physicians' Leisure Library. Detroit: Geo. S. Davis, 1891. 12mo., pp. 142. Price, 25 cents.

This little book, while it contains much that is practical, useful and, above all, sensible, is written in a careless manner and in an obscure style not always free from grammatical errors. Frequent reference to proprietary preparations and certain manufacturers adds nothing to its worth.

MEDICAL AND SURGICAL REPORTS OF THE COOK COUNTY HOSPITAL, Chicago, Ill., for the six months ending December 31st, 1890. Edited by LOUIS J. MITCHELL, M.D., Registrar. Chicago: 1891.

The amount of valuable material passing through this hospital is indicated by the fact that for the six months covered in this admirable report there were three thousand eight hundred and twenty-three admissions, which are carefully and systematically tabulated. In addition there are, besides medical and surgical abstracts, valuable papers on "Maxillary Cysts Connected with the Teeth," by Ludwig Hektoen; "Dislocation of the Lens into the Anterior Chamber," by Boerne Bettman; "Infectious and Parasitic Nature of Carcinoma," by Bayard Holmes, and "Use of Koch's Lymph," by John B. Murphy and E. W. Lee. Hereafter the reports are to be issued annually.

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FEVER: ITS PATHOLOGY AND TREATMENT BY ANTIPYRETICS. Boylston Prize Essay of 1890. By HOBART AMORY HARE, M.D., B.Sc. Philadelphia and London: F. A. Davis, 1891. 12 mo., pp. 166. Cloth, $1.25.

When this essay was presented to the Boylston Prize Committee it was entitled, "The Uses and Values of Antipyretics," which better describes it than its present title. It is a study, and a very careful, reliable and painstaking study of antipyrin, antifebrin, thallin, phenacetin and salicylic acid. The bibliography of the subjects is abundantly represented, and like every thing from the pen of its author the book is pervaded by a practical common sense attitude that is refreshing.

MEDICAL SYMBOLISM in Connection with Historical Studies in the Arts of Healing and Hygiene. Illustrated. By THOMAS S. SOZINSKEY, M.D., Ph.D. Philadelphia and London: F. A. Davis. 1891. 12 mo., pp. 172. Cloth, $1.00.

It is a real pleasure to encounter a little work of this sort, and it is probable that even those best informed in the history of medicine will find something new in the painstaking, scholarly and interesting pages of this author. To many the ancient dignity and breadth of the founders of the medical profession will come as a revelation. It forms number nine of the Ready Reference series.

MATERIA MEDICA AND THERAPEUTICS, with Especial Reference to the Clinical Application of Drugs. By JOHN V. SHOEMAKER, A.M., M.D. Vol. II. being an independent volume upon drugs. Philadelphia and London: F. A. Davis, 1891. 8vo. pp. 1,004. Cloth, $3.50; Leather, $4.50.

The purpose of this work is to furnish practical information in regard to pharmaceutical therapeutic agents, based largely upon personal experience, and the task has been well accomplished. The introduction contains a good working classification by which drugs of similar values and physiological activity are grouped instructively. The rest of the volume contains the detailed description of drugs arranged alphabetically. Each one is defined rather than described, and its preparations, physiological action, pharmacology and therapy given in a free, clear and practical manner. Most of the new preparations, such as the coal-tar

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products, are properly admitted, and their value is conservatively estimated. Even "tuberculin" finds a place, but is treated with wise reservation. The frequent introduction of formulæ showing desirable combinations of drugs will be found by many to be a useful feature. It is heartily commended to student and practitioner.

INTERNATIONAL CLINICS: A Quarterly of Clinical Lectures on Medicine, Surgery, Gynecology, Pediatrics, Neurology, Dermatology, Laryngology, Ophthalmology, and Otology. By Professors and Lecturers in the leading Medical Colleges of the United States, Great Britain and Canada. April, 1891, London and Philadelphia: J. B. Lippincott Company. Chicago: W. T. Keener. 8vo. pp. 358. Cloth $2.75; Leather $3.00.

The first number of this publication amply carries out the promise of its prospectus and will be received with pleasure by the profession. It is somewhat difficult to assign it a place, as it is a new departure in medical literature, being neither a journal nor a treatise. Its advantages are numerous, furnishing most satisfactory half-hour readings of a very practical sort, but to those who desire a complete sketch of any one subject its limitations are obvious. It goes without saying that the lectures are of unequal value, and at times carelessness in diction, or reporting, or revision greatly mar the value of the matter presented. There is a tendency to bring forward rare and exceptional cases, the interest of which is great but their practical everyday value not so pronounced. This will probably be less the case in succeeding numbers. Of the form, illustrations and typography only the highest praise can be spoken. The contributors to this volume are, in Medicine, Ross, Porter, Finlayson, Heath, Bruce, Loomis, Gairdner, McDonnell, Shattuck; in Surgery, Keen, Cheever, Hulke, Parkes, Gaston, Carmalt, Nancrede, Robson; in Obstetrics and Gynecology, Mann, Cameron, Parvin, Byford, Goodell; in Pediatrics, Forcheimer, Gray, Duckworth; in Neurology, Wood, Sachs, Mills, Ferrier, Mitchell; in Laryngology, Cohen; in Dermatology, Fox, Dumesnil, Hyde; in Ophthalmology, Chisholm, and in Otology, Buck. There are twelve half tone plates and a score of woodcuts. A brilliant and successful future for the Clinics is predicted.

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News Items.

Dr. Reeves Jackson is now residing at 270 Michigan avenue. Telephone 89.

Dr. E. B. Weston has removed his office to 125 State street, Room 7. Hours, 1 to 3 P. M.

Dr. Frank Billings sailed for Europe June 27th on the Umbria, to be gone several months.

Professor Virchow will receive the freedom of the City of Berlin upon his seventieth birthday.

Dr. William E. Casselbery was married, June 23d, to Miss Eliza Gold, of this city, at Grace church.

The Medical Society of the County of New York has now more than eleven hundred paying members.

Professor Angerer, of Munich, has been appointed Professor of Surgery in the university to succeed Nussbaum.

Dr. W. F. Coleman has removed his residence from 3132 Rhodes avenue, to "The Erie," 3706 Lake avenue.

Dr. Francis Minot has resigned the Hervey Professorship of the Theory and Practice of Medicine at the Harvard Medical School.

A monthly journal of gynecology, obstetrics and abdominal surgery, edited by Dr. Charles N. Smith, of Toledo, Ohio, has appeared.

A Swiss chemist has discovered a method of crystallizing chloroform for commercial use, thus guarding it against changes and impurities.

The American Association of Obstetricians and Gynecologists will hold its annual meeting at the New York Academy of Medicine September 17th, 18th and 19th.

The June number of the New York *Medical Record* contains a valuable supplement concerning American health and summer resorts, including, unfortunately, many advertisements.

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Mrs. Richardson, wife of T. E. Richardson of New Orleans, has given one hundred thousand dollars to the medical department of Tulane University for a new building.

Dr. Fordyce Barker, by his will, has left to the New York Academy of Medicine all the works in his library relating to obstetrics, gynecology and the diseases of children.

Sir Prescott Gardner Hewett, the distinguished English surgeon, died in London June 20th. He was Sir James Paget's successor as President of the Royal College of Surgeons.

The Library of the Paris Medical School contains over forty thousand volumes. In its new quarters, recently finished, there is a reading-room which accommodates about one hundred and fifty.

The College of Physicians and Surgeons of New York has become a department of Columbia College and will occupy the buildings given by the Vanderbilts. The seven regular professors are to receive seven thousand dollars a year.

On May 14th the Belgian Chamber of Representatives passed a *projet de loi* compelling the administrative authorities of the hospitals of Ghent and Liège to open their wards to the medical faculties of the universities of these towns for purposes of clinical teaching.

On June 14th a memorial bust of Ferdinand von Hebra, the famous dermatologist, was placed in the Arcade of the University of Vienna. Professor Kaposi, von Hebra's son-in-law and successor in the chair of Skin Diseases at Vienna, delivered an address on the occasion.

The Austrian Government has introduced into the House of Deputies a bill dealing with the sale of food. It provides among other things, for the establishment of laboratories where not only public authorities, but private persons can have articles of food examined by skilled analysts.

The American Society of Microscopists will hold its fourteenth annual meeting in Washington, D. C., August 10th, and continue in session five days. Any information concerning the Society or its meetings can be had by addressing Frank L. James, its president, Box 568, St. Louis.

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An Ethnological congress will be held in Paris in September, 1892, in connection with which there will be an exhibition of living specimens of the different races of mankind. Several well known explorers have undertaken to do their best to make the collection of "specimens" as complete as possible.

Medical men in Canada appear to take more interest in politics or they find more favor with the constituencies than their brethren in this country. There are seventeen representatives of the profession in the Canadian House of Parliament, and we understand that Sir CHARLES TUPPER began life as a medical practitioner.

The report of the commission in lunacy of the state of New York shows a material decrease in the proportion of lunatics to population. This satisfactory result is attributed by the commissioners partly to improved methods of registration and partly to better housing and attention and better treatment generally.

Surgeon-General JOHN B. HAMILTON has removed from Washington and may be found at the Sherman House; hours 12 to 3, except Saturdays; telephone 2201. His practice will be limited to surgery. As before noted he has accepted the chair of Principles of Surgery and Clinical Surgery in Rush Medical College.

The American Neurological Association meets at Washington September 22d, 23d and 24th. An interesting programme is assured. The American Dermatological Association meets in Washington on the same dates, and the Congress of American Physicians and Surgeons will hold their triennial session there at the same time.

The trustees of Columbia College have decided to devote the late Mr. CHARLES M. DA COSTA'S bequest of ten thousand dollars to the establishment of a biological laboratory to be built on the grounds of the medical school (the College of Physicians and Surgeons). The professor in charge is to be designated the Da Costa Professor of Biology.

The Military Surgeons of the Wisconsin National Guard met at Milwaukee June 20th. The proposed meeting of the Surgeons of the National Guard of the United States will be held in Chicago in September, and about four hundred have expressed the inten-

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tion of being present. Papers are promised by Surgeon-Generals BRYANT of New York, YANDELL of Kentucky, and SENN of Wisconsin.

In Wisconsin the State Board of Charities and the State Board of Supervision, which have been in endless contention for years over the management of the public institutions, have been superseded by a Board of Control combining their several functions. It is made up of six members appointed by the Governor and an annual salary of two thousand dollars is paid each member.

The pronounced opposition to Dr. JOHN H. RAUCH, Secretary of the Illinois State Board of Health, finally culminated in legislative action requiring that the secretary be a member of the board. This practically ousts the incumbent from office, and must be a matter of regret to all who have an interest in the valuable services the board has rendered the state and the medical profession all over the country.

On May 30th Professor DEROUBAIX, the eminent Belgian surgeon, was presented with his statue in bronze by his colleagues of the Faculty of Medicine of the University of Brussels, on the occasion of the fiftieth anniversary of his appointment to the chair of Surgery in that seat of learning. Among those present at this interesting ceremony were nearly all the medical and scientific notabilities of Belgium.

The County Commissioners have appropriated eighty thousand dollars for two new pavillions at the Cook County Hospital, thirty-five thousand dollars for a morgue, forty thousand dollars for a Detention Hospital for the Insane, and forty thousand dollars for detached wards for contagious diseases. Plans are perfected and building will go rapidly on, that for the Detention Hospital and Morgue being well under way.

The College of Physicians of Philadelphia, a medical association founded in 1787, is in trouble over the resignation of the Board of Censors, Drs. Goodell, Stillé, Hunt and Da Costa. A recommendation of censure upon Dr. Joseph Price for the use of slanderous language towards a fellow member was not favorably received, the College, by a vote of forty-five to forty, postponing its consideration. Hence the action of the Board.

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It is stated that the Austrian Minister of the Interior has recently issued an ordinance that the burgomasters of all communes must exercise strict supervision over the medical men practicing within their jurisdiction in the matter of legibility of prescriptions. They are charged to see that every prescription is clearly and legibly written in all its parts, so that there may be no doubt as to the remedy, the dose, or the signature.

June 10th Dr. NICHOLAS SENN was formally welcomed to Chicago by the local fraternity at a dinner given by the Alumni of the Cook County Hospital at Kinsley's. Addresses were made by N. S. Davis, Dean of the Chicago Medical College; G. L. Holmes, President of Rush, and A. Reeves Jackson, President of the College of Physicians and Surgeons; by Dr. D. R. Brower, G. Fletcher Ingals and others. About fifty guests were present.

Cremation seems to have acquired a sure foothold in the Argentine Republic. Since 1886 the total number of cremations carried out there has been six thousand seven hundred and eighty-nine; in 1890 alone they amounted to two thousand and eighty-five. A law exists in Argentina to the effect that the bodies of all persons dying of infectious diseases and the fragments that remain of corpses that have been dissected must be burnt.

The inspection of hog products at the Stock Yards is in operation, and in a short time every hog killed in Chicago will, it is hoped, bear the government stamp attesting its freedom from trichinæ. At present thirty microscopists are employed, and a piece of the diaphragm is the part usually selected. Already many hogs have been condemned, though only a small portion of the daily output is submitted to such examination. The moral is obvious.

Dr. LOUISE SEDGWICK, of Wheaton, Ill., daughter of the late Dr. S. P. Sedgwick, died June 5th, of typhoid fever, at the age of twenty-seven. Since the death of her father in July of last year she had carried the burden of his practice. In her were combined all the best elements of the woman practitioner, and her untimely death terminates a most useful and promising career. She was a graduate of the Woman's Medical College of Chicago and the Woman's Hospital.

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THE *Deutschè medicinische Wochenschrift* announces, apparently on the best authority, that Professor KOCH since his return from Egypt has been principally engaged in isolating the active principle of tuberculin, and defining its chemical characters, so as to make it possible to test its properties in the same way as is done in the case of other medicinal substances. As soon as the researches have been brought to a successful issue—a result which there is reason to hope will be attained within the next few months—Professor Koch will publish a comprehensive work in which full particulars will be given, not only of these later investigations, but of the whole procedure used in the preparation of the remedy.

An official report by M. LEON PERDRIX, on the antirabic vaccinations performed at the Pasteur Institute in Paris during 1890, which is published in the *Annales de l'Institut Pasteur* of May 25, 1891, shows that last year the total number of persons treated was 1,546. Of these, 314 were foreigners, of whom 56 came from England, 21 from Ireland, 4 from the Indian colonies, 1 from Germany, 101 from Belgium, 2 from Brazil, 2 from Egypt, 4 from Spain, 3 from the United States, 19 from Greece, 17 from Holland, 2 from the Dutch Indian colonies, 8 from Hungary, 1 from Italy, 2 from Monaco, 67 from Portugal, 1 from Roumania, 2 from Russia, and 1 from Turkey in Asia. Of the 1,546 persons treated, 11 died of hydrophobia after the completion of the inoculations, being a total mortality of 0.71 per cent.; of the 11 persons who died, 6 died within a fortnight of the completion of the treatment, and 5 at dates beyond that period.

A number of changes have been made in the Faculty of the College of Physicians and Surgeons of this city. The directory is to be increased from five to seven members. Professors S. A. MCWILLIAMS, LEONARD ST. JOHN, C. C. P. SILVA, JOHN G. HARPER, H. J. REYNOLDS and J. T. JELKS retire. Dr. CHARLES WARRINGTON EARLE has accepted the Professorship of Obstetrics, BAYARD HOLMES and WELLER VAN HOOK conjointly the chair of Surgical Pathology and Bacteriology; G. FRANK LYDSTON that of Surgical Diseases of the Genito-Urinary Organs; ELMER E. BABCOCK, Surgical Anatomy; ROBERT H. BABCOCK, Clinical Medicine, Diseases of the Chest and Physical Diagnosis; T. M. HARDIE, Histology and Microscopy; BOERNE BETTMAN, Diseases of the Eye and Ear, and

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Organic and Inorganic Chemistry is combined under the Professorship of Dr. J. A. LYDSTON. A thorough bacteriological laboratory is to be organized and Dr. T. L. B. JENNY is appointed Demonstrator. Some minor changes will also be made. The infusion of new blood is hoped and confidently expected to increase the teaching strength of the school.

The Oakland Medical Club of Chicago is a new organization of physicians with a strong social bias and a purpose to inculcate the best friendly relations among its members. They meet once each month at table and indulge in a mildly professional discussion. The "Sunset Club" has been imitated in a declaration of principles. The requirements for membership, from the following official statement, may appear a trifle broad. Object: The Oakland Medical Club is to foster rational good fellowship and tolerant discussion among physicians. Requirements for membership: Any genial and tolerant physician may become a member on approval of the Executive Committee. Programme: A dinner the last Friday of every month at eight o'clock, followed by short talks upon a topic previously announced by the Secretary. Expenses: The only expenses incident to membership in the Oakland Medical Club are an annual assessment of one dollar for stationery, printing, etc., and the price of each dinner partaken of. Guests: Members are privileged to bring guests to the meetings, provided notice is sent to the Secretary in time to prepare for their entertainment. The experiment will be watched with interest.

The County Hospital and County Infirmary are in the throes of constant official investigations on all sorts and conditions of charges. Scarcely a day goes by without sensational articles in the daily press on these matters, which usually are exaggerated, but enough foundation unfortunately exists to cause chagrin to all interested in our public charities. The presence of various abuses is unquestionable and apparently unavoidable as long as a political control exists with its wide-reaching and pernicious influence. As the county increases in population, it will be more and more difficult to wrest these institutions from the grasp of local politics and restore them to a proper place where they may be conducted for the good of the community only. To this end every physician should exert himself to instruct public opinion and induce a general interest which cannot be ignored.

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REPORT OF THE CHICAGO HEALTH OFFICE.

For May, 1891.

Population, 1,200,000.

DEATHS.		DEATHS—Continued.	
Measles	37	Bronchitis	78
Scarlet Fever	39	Capillary Bronchitis	27
Diphtheria	50	Pleurisy	3
Pertussis	29	Congestion of Lungs	6
Typhoid Fever	408	Phthisis Pulmonalis	212
Influenza	23	Violence	109
Pneumonia	259	Suicide	24
Total deaths from all causes			2585
Ratio per thousand of population			25.85
Ratio per thousand of population, May, 1890			16.13

CASES REPORTED.

Diphtheria	72
Scarlet Fever	203

METEOROLOGICAL SUMMARY.

For May, 1891.

MEAN BAROMETER	30.115
Highest Barometer, May 5	30.457
Lowest Barometer, May 31	29.821
MEAN TEMPERATURE	53.4
Highest Temperature, May 9	81
Lowest Temperature, May 4	35
Greatest daily range of Temperature, May 15	30
Least daily range of Temperature, May 22	3
Total deficiency in temperature during month	88
Total excess in temperature since January 1st	112
Prevailing direction of wind	N. E.
Total movement of wind, miles	11,865
Extreme velocity of wind, direction, May 9	51; S.
TOTAL PRECIPITATION.....inches	2.09
Number of days on which .01 inch or more of precipitation fell	7
Number of cloudless days	14
Number of partly cloudy days	10
Number of cloudy days	7

H. C. Frankenfield,
Sergeant U. S. Signal Corps, Chicago, Ill.

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THE

CHICAGO MEDICAL RECORDER.

Journal of the Chicago Medical Society.

DRS. JOHN A. ROBISON, WILLIAM T. THACKERAY, EDMUND J. DOERING,
Committee on Publication.

DR. ARCHIBALD CHURCH,
Editor for the Committee.

VOL. I. NO. 6. NEW SERIES. | PUBLISHED MONTHLY. CHICAGO, ILL., AUGUST, 1891. | Single Copies, 25 cents. $2 a year, in advance.

Original Articles.

AN ADDRESS IN GENERAL MEDICINE.

BY FRANK BILLINGS, M.S., M.D., CHICAGO.

Professor of Physical Diagnosis and Clinical Medicine, Chicago Medical College, etc.

Read before the Illinois State Medical Society, at Springfield, May 20th, 1891.

During the last year much has occurred in the medical world which would furnish innumerable subjects of interest to present to you to-day. We have suffered from a continued visitation of that universal disease, la grippe, which has seized alike upon the rich and poor, the strong and weak, the young and old, with many manifestations of such a complex and multiform character, and with such deadly effect, that it furnishes us with an inexhaustible fund of material for future investigations.

Scientific investigation in every branch of medicine, and in the collateral arts and sciences, has been unusually active, and many assertions of facts as to the cause and cure of disease have been made. It is not my purpose, however, to attempt a review of the whole field of medicine, but to confine myself to a subject that has excited, perhaps, more comment and interest in the professional and lay world than any other single announcement ever made. I refer to Professor Koch's announcement of the dis-

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covery of a substance which he asserted would render to animals immunity against innoculation with the tubercle bacillus, and would also cure animals ill of tuberculous disease. A similar announcement made by any other man would, perhaps, not have been received with such universal acceptance by both the medical profession and the laity. This is evinced by the fact that, although the composition of the so-called lymph was withheld, and that it could only be obtained by investigators from one commercial firm in Berlin, yet thousands of physicians at once congregated from all parts of the world to personally observe the effects of the remedy in use in the hospitals of Berlin, and to secure even a small quantity of the precious secret fluid for use at home.

Quite as many patients, afflicted with what the lay press was pleased to call the "great white plague," made a pilgrimage to the modern Mecca and placed themselves confidently under the care of those officially designated to inject the golden fluid under their skin, and for which the rich and the poor were willing to pay any price within their respective means. Where will you find another single instance of such universal confidence in the assertions of one man?

We must admit that Professor Koch's professional history warranted this world-wide confidence, for by unaided efforts he deciphered the etiology of tuberculosis, forging each link of the chain of evidence equally strong and so exhausting the subject that no subsequent review, or repetition of his work by competent investigators, failed to accept and appreciate the validity of his conclusions: That, "*not only can we say with justice and right that the tubercle bacillus is the cause of tuberculosis, but that it is the only cause, and that without tubercle bacilli there is no tuberculosis.*" To fully appreciate this assertion, which is, I think, generally accepted by the best pathologists and clinicians, it is necessary to recall the history of tuberculosis. We can best consider its history in a few words, by dividing it into four periods, the first extending from the time of Hippocrates to the first quarter of the nineteenth century. This includes the writers of antiquity, who had no knowledge of tuberculosis in its present sense, and who designated it phthisis, or consumption, which included all diseases characterized by suppuration, because such processes in the thoracic cavity were marked by emaciation.

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Virchow has shown that these historians had no knowledge of tubercles; for although hard masses in the lungs, tonsils, palate, urethra and various glands were termed "tubercula," they were nothing more than collections of pus circumscribed and maturing for artificial or spontaneous discharge. After Galen there is little or nothing written of tuberculosis for about fourteen hundred years. Further progress in the study of phthisis became possible only with the study of anatomy, which could be pursued with freedom only as late as the beginning of the seventeenth century. Then Silvius, Willis, Morton, Bonnet, Sydenham, Mangetus, Boerhaave, Morgagni, Avenbrugger, Stark, Cullen, Portal, Kortum, Baillie and others contributed to the anatomy and clinical aspects of phthisis, and while some of them recognized and accurately described the anatomical appearance of tubercles, they were recognized only as curiosities, or as an inflamed lymphatic gland. Their existence elsewhere than in the lungs, though sometimes recognized, established no connection with the process in the lungs. Clinically the disease was still considered a suppuration of the lungs, due to an acrimonious juice, or scrofulous matter developed in consequence of heredity, or a corruption of the natural fluids; or a peculiar constitution.

The beginning of the nineteenth century marks the commencement of the second period and the origin of the term tuberculosis. Until then it had no distinctive name. The contributions of Bayle concerning the nature of tuberculosis and the discoveries of Laënnec regarding the diagnosis of the disease were seemingly not based upon investigations made by previous observers, and although there was really no lapse of time between the observations of others and their contributions, they were as totally distinct and separate as if separated by centuries. Both recognized tuberculosis as a specific disease; a general affection with various local expressions in the form of tubercles, associated with a cachexia which was called the tuberculous. Laënnec first recognized and described all tubercles as different stages of one disease. He said "There is but one tuberculosis, and scrofula is only an external expression of it." Bayle described the anatomical peculiarities of the disease; Laënnec studied the question from a clinical standpoint and the relation of physical signs to the different stages in the history of a tubercle.

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The conclusions of Laënnec that tubercle was a specific product, and tuberculosis a specific disease, was combatted first by Broussais in 1821, who considered the disease a chronic pneumonia—that is, the product of a simple inflammation. In 1825 Louis confirmed the views of Bayle and Laënnec by valuable contributions on the semeiology and diagnosis of tuberculosis. From this time onward the disease was the chief cause of discussion between pathologists, although the writings of Bayle, Laënnec and Louis would seem to have settled the specific nature of the disease.

New ideas were advanced by Rokitansky, by Addison, by Lebert, by Reinhardt and others, but it was Virchow who for a time overthrew the idea of tuberculosis as a specific disease. His ideas were chiefly based upon the morbid anatomy of tuberculosis, and his views held sway just so long as evidence was collected from morbid anatomy alone. He regarded tuberculosis as a product of a retrograde metamorphorsis, a necrosis of tissue with subsequent absorption of the fluid elements. This he considered cöordinate with other retrograde changes, such as the waxy, athromatous, fatty and calcareous degeneration, or infiltration; and, therefore, there could be an inflammatory, a cancerous, a sarcomatous, a waxy tuberculization, but that tuberculization was usually a cheesy change. In short he considered it a secondary affection, new product of proliferating connective tissue elements, never in epithelial structures. As to the process in the lungs, it was not necessarily a tuberculosis at all, but a secondary caseation of an inflammatory process.

Niemeyer supported Virchow and declared phthisis pulmonalis to be a caseous pneumonia, and that any pneumonia could become caseous; with Virchow he believed the disease was not directly inherited, although its tendency was, in many cases, congenital. Neither Virchow nor Niemeyer coincided with Buhl that miliary tuberculosis resulted from the absorption into the blood of minute masses of caseous matter. The tendency of consumption to become tuberculosis was, however, admitted. The substantial theory of Virchow and his followers was, therefore, a sequence of, first, an inflammation; second, a caseous degeneration; and third, tuberculosis.

The great mass of medical men supported the views of

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Virchow, but many clinicians advocated the doctrines of Laënnec and Louis, because clinical experience supported the identity of phthisis pulmonalis and tuberculosis.

The discovery of the inoculability of tuberculosis by Villemin in 1865 marks the beginning of the third period and paves the way to the real solution of the cause of the disease. It was not an uncommon belief with pathologists in the latter part of the eighteenth century that phthisis was contagious, and individual advocates of this belief maintained this view and attempted to support it by experiments. But nothing of importance, either for or against the subject, was done until Villemin, by the introduction of tuberculous matter from the lungs and the injection of sputa into the bodies of the lower animals, proved tuberculosis to be a specific, inoculable disease and transferable from animal to animal. He also believed it originated by direct inoculation, or contagion, by germs in the air, or in tuberculous material. He said heredity and previous disease, such as pneumonia, pleurisy, catarrhal bronchitis, are never the direct causes of the disease, although they may increase the susceptibility of the individual to the infection in the air. These conclusions, stated in decisive language and supported by direct and control experiments, made a marked impression on the medical world. Cohnheim, Lebert, Roustan, Bonley, Cohn and others reached confirmatory conclusions. But Simon, Sanderson, Wilson Fox and Waldenberg made experiments with indifferent substances, the products of other diseases and foreign bodies—bits of cotton, glass, etc.—which resulted in the production, apparently, of tubercles and tuberculous disease. This seemed to prove the falsity of Villemin's conclusions, and to reëstablish the doctrine that tuberculosis might result from any kind of inflammation. It is needless to say these fallacies were due to the accidental introduction of the germs of tuberculosis on the indifferent substances used, and by the use of real tuberculous matter the products of diseases then believed to be non-tuberculous, such as caseous pneumonia, caries of bones, etc., etc. Although the experiments of Villemin proved the specific character of tuberculosis and his views received the support of the best known pathologists of the day,—Cohnheim, Köster, Wagner, Friedländer, Schuppel and others, the bulk of the medical world still believed tuberculosis to be a

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secondary affection incidental to any inflammation. The few, termed fanatics, believed in the specific nature of the disease, and a search was at once begun for the specific cause.

Klebs was a pioneer in the belief that the disease was due to a specific organism, as in other infectious diseases. Klebs, Schuler and Aufrecht each in turn announced the discovery of germs in tuberculous disease, which were claimed to produce the disease by inoculation. Imperfect methods of isolation and consequent impure cultivations of the germs resulted in the introduction of mixed cultures, which contained probably the undiscovered true germ.

Thus we come to the fourth period of the history of tuberculosis, with the question of the cause and the true nature still in dispute. The best minds of the day were battling still over the question that had received more attention than any other in pathology, when at once the contending hosts were silenced by the results of the work of one man. By new methods he was able to isolate germs in culture media, and thus secure pure cultures, of not only the specific germ of this disease, but also to enable others, by this method, to discover the specific germs of other infectious diseases. He found also that this specific germ had a special reaction to the aniline dyes, which made its recognition possible in all tubercular matter and enabled him to promulgate the law that "Where the tubercle bacilli are, there is also tuberculosis." I repeat, Koch's decisive and conclusive work settled at once the specific nature and the cause of tuberculosis. No pathologist of repute disputed the law as laid down by him. Then by his subsequent work he just as clearly showed how the anatomical lesions are produced by the germ; that the grey tubercle is the primary anatomical change, and the yellow tubercle, caseation and destructive lesions are natural stages in the history of the primary lesion, modified it is true by secondary inflammation or by the peculiar tissue of the organ affected.

Just how the germs get into the tissue is a matter of conjecture, but it is believed that they gain entrance by channels that communicate with the air, or by the blood or lymph vessels, by means of the white blood corpuscles. Koch believes that the white corpuscle with its contained bacilli wanders into the tissues and by the action of the bacilli the corpuscle develops into

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epithelioid cells, which develop into a tubercle. At any rate, with the bacilli established as the specific infection, we have an intrinsic parasite, which may be expelled from the host through the sputum or the excretions, and may contaminate the air or food, and be a constant source of danger to the community.

It is believed that the disease is always acquired, but that some individuals offer a better soil for its development than others, and this more suitable soil is, perhaps, an inherited weak resisting tissue in the one case, or a generally weakened condition of the whole body which renders one more susceptible to this, as likewise to other infectious diseases. In other instances, the individual may be exposed to such an enormous number of germs that he becomes infected in spite of good resisting power. The specific cause and means of infection settled, the question of how to destroy the germs in the body, became a source of inquiry. Many methods have been offered and have failed, excepting in the case of circumscribed disease within reach of the knife of the surgeon. Thus we have had methods of inhalation by means of machines for compressing and rarefying air, medicated in varying strengths with all the germicides in turn known to science. Patients have been made to breathe the vapors of volatile substances and the fumes of burning germicides, with the futile hope of killing the germ in the host. Medicines known to kill the germ in artificial cultures have been injected into the diseased areas, in the lungs and other organs. Bergeron gave us a method of rectal inflation with hydrogen sulphide and Weigert hoped to remove the cause by the inhalation of hot air. Constitutional remedies in the form of germicides have been offered in the volatile oils, beechwood creasote, etc., and although in nearly all cases enthusiastic assertions were at first made of their success, they were usually pronounced, after a trial, specifically worthless, by the general profession.

With the development of bacteriology, it became early a question of how a specific germ produced disease. The physiological chemist soon answered the question, by showing the presence, in pure cultures, of germs of a chemical substance, which was a product of germ life and was also curious, as it seemed the cause of death of the germ itself in culture media, when accumulated in sufficient amounts. These substances were

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found to be toxic in some instances to animals, and were called ptomaines, because found in cadavers. These germs of putrefaction, in organic media, fish, milk, meats, etc., were found to produce ptomaines which caused toxic effects and sometimes death in animals. Pathogenic germs also produce toxic ptomaines, peculiar to each germ, in many diseases, such as typhoid fever, the eruptive fevers, septicæmia, etc., and the peculiar symptoms of the disease is ascribed to the ptomaine, the product of the germ, and not to the germ itself. Now as the ptomaine is the cause of the morbid symptoms in an infectious disease, it was argued by some that the immunity granted by an attack of the so-called contagious diseases, scarlatina, measles, etc., was due to the lasting protective influence of the particular ptomaine upon the individual. If vaccinia gives protection against small-pox, then it is probably the ptomaine of the vaccine virus which acts upon the individual in such a manner as to render him invulnerable to small-pox. But long before the discovery of ptomaines it was discovered by Pasteur that the toxic effect of a germ culture was increased, or decreased, as the case might be, by cultivating it in modified conditions, as to food, light, heat and air, and that successive generations of pure cultivations became attenuated in strength of virus. This attenuated virus produced a mild, modified disease which gave protection to the animal against the unmodified disease during life, or for a varying period of time. It is now believed, I think, that the ptomaine developed by cultivations, modified as indicated, so weakens the germ in successive generations, that a ptomaine of less toxic power but otherwise identical with the original poison is produced.

Ptomaines are usually held in solution in the fluid resulting from the growth of the germs in the nutrient media, and the ptomaine may be used in this fluid, free from, or with its contained germs, in some instances for protective inoculation. Thus Pasteur has protected, for an indifinite period, fowl against chicken cholera, sheep against foot rot, and cattle and sheep against anthrax, by inoculation of each with the modified cultivations of the respective diseases. Vaccination is doubtless an inoculation with the germ products of small-pox, modified by cultivation on the cow. Now it is, of course, only possible to

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protect an individual against a disease in which one attack usually gives immunity. These are few in number and are such acute infectious diseases as scarlet fever, measles, small-pox, mumps, chicken-pox, whooping-cough, and usually typhoid fever. All are in a measure self-limited also in duration. On the other hand no one would expect immunity by successful modified inoculation, from diphtheria, acute articular rheumatism, cerebro-spinal meningitis, pneumonia, cholera infantum, etc., although these are also self-limited, for the unmodified disease does not protect against future attacks.

Now let us return to Koch's lymph. After apparent successful use for a time on man, he was induced to make its composition known. It proved to be the filtered product of a pure cultivation of the tubercle bacillus, diluted with glycerine and containing a small amount of carbolic acid. You are familiar with its effects when inoculated on man, but I will repeat them briefly. The inoculation of a tuberculous patient with gm. 001 of the lymph is followed, in about five hours, by a chill or rigor, succeeded by a sharp fever, rapid pulse and respiration, general aching of the whole body, weakness, trembling of the muscles, sometimes nausea and vomiting, and with symptoms referable to the organ affected with the disease; as cough and increased expectoration in lung tuberculosis. The attack lasts from twelve to fifteen hours. On the healthy and non-tuberculous sick, the fluid causes some reaction but always of less degree than in the tuberculous. The local reaction on visible tubercular processes, consists of swelling, redness, pain, and when the skin is involved, of exfoliation of the diseased tissue. The sharp reaction first noted in all tubercular cases, in contrast to the less decided reaction on those supposed to be healthy, led Koch to announce it as of positive diagnostic value. The remedy, it is claimed, does not destroy the tubercle bacilli, but does kill the living tuberculous tissue, which may contain the living tubercle bacilli. These must be thrown out of the body with the dead tissue to render the individual safe from further infection. "The remedy kills living tuberculous tissue, and when this is accomplished, the dead tissue should be removed surgically, when possible, or if the body must eliminate it, the remedy should be repeated often to protect and prevent the reinfection of healthy tissue. As tissue is destroyed, the

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reaction to the remedy becomes less, in equal ratio to the decrease of living tuberculous tissue. On this account the dose may be greatly increased without harm." (*Koch.*)

Koch sensibly and modestly advised against the indiscriminate use of the remedy, and while he believed it would prove of great aid in the recognition of surgical tuberculosis, and in the early stages of the pulmonary disease, could not possibly more than relieve the advanced cases.

The effects of the lymph as described by Koch show it to be a powerful remedy, a ptomaine or ptomaines, the product of the growth of the bacillus tuberculous. Have we not from our probable knowledge of the action of ptomaines, evidence that the lymph reaction is only the action of the tubercular disease in the individual, stimulated by a larger amount of tubercular ptomaine than is usually developed by the bacilli in the tissues in the natural course of the disease? To the ptomaine is ascribed, at least, the primary anatomical lesions and the degenerations of the tubercle, even into caseous matter, what may be, not inaptly, called a slow necrosis. Why, then, is the rapid necrosis, or liquefaction, of living tuberculous tissue induced by the injection of a relatively large dose of tubercular ptomaine, or virus, anything more or less than an intensified local tuberculosis? It is a process of rapid change, so rapid as to be a necrosis in place of the ordinary degenerative changes that take place in the disease running a subacute or chronic course. And this view is recognized by Koch himself and is further supported by some facts based upon the results of the use of the remedy. It causes a reaction in the patient marked by symptoms of acute toxæmia, differing in degree only, from the natural symptoms of the disease. This reaction, like the natural symptoms, is mild or severe in direct ratio to the extent of the disease in the patient. Then naturally the best results have been obtained in cases of incipient tuberculosis, or in external tuberculosis, when in the first, the small amount of rapidly ripened tubercular tissue could be thrown out of the body, or as in the external disease, when the exfoliation of even large masses of matured tubercular matter could be thrown off, or surgically removed without danger of septicæmia by mixed infection. Then if all bacilli could be discharged, or removed with the necrosed tissue, a simple ulcer or cavity only would be left to heal and a cure result.

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In advanced cases of internal tuberculosis with large areas of tubercular disease, and in some incipient cases, the resulting rapid necrosis has appeared sometimes to convert a mild case into a more severe and acute form. You will remember that Virchow found fresh deposits of an acute disseminated tuberculosis in a number of autopsies made upon patients that had received this form of treatment. It seems clear that this widespread tubercular disease must be due to a dissemination of tubercle bacilli freed from a localized tubercular focus which has suddenly taken on unnatural activity. The same result has occurred accidentally time and time again in the natural course of the disease and after surgical operations upon localized tuberculosis, when the affected tissue was not wholly removed. Now naturally such a toxic substance could affect tuberculous tissue only, and the reaction to it would be as characteristic as described by Koch. But could not exceptions to this reaction arise in localized quiescent tubercular processes? The result of more extensive observation seems now to show that the presence of tuberculosis is not always manifested by the reaction, and it is not therefore of as great value in diagnosis as was first asserted.

Again, can it give immunity against the disease to those inoculated? Koch's experiments upon lower animals seemed to prove this assertion, but from our knowledge of the pathology of this disease and its clinical history, who can say that the disease itself gives one protection from similar attacks even though fully recovered from the disease.

Tuberculosis too, in all its manifestations is unlike all infectious diseases in which one is usually protected, permanently, by a single attack. And, again, would we expect a remedy which will protect an animal against a disease, to cure the disease in another? Vaccina affords one protection against variola, but who will vaccinate the individual ill with smallpox and hope thereby to cure him? And yet that is more reasonable in variola, an acute self-limited disease, than in tuberculosis, an infection of varying degree of severity and rapidity of course.

Has the remedy been successfully used? It has now been on trial for six months and a tabulated report of its use in the hospitals of Germany has been made. We learn that 2,172 patients had received injections, covering a period beginning in September, 1890, and ending about the middle of January, 1891.

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Of these patients no result was reported in 403, 1061 suffered from tuberculosis of internal organs, of whom it was reported 13 were cured; 171 improved substantially; 194 improved; 586 unimproved, and 46 dead.

Of 708 cases of external tuberculosis, it was reported 15 were cured; 148 substantially improved; 237 improved: 298 unimproved, and 9 dead.

The percentage of cures and improvements is larger naturally in the cases of external tuberculosis than in the disease of internal organs, while the percentage of unimproved cases and deaths is larger in internal tuberculosis. They do not differ so widely, however, as to render it unfair to class them together in estimating the percentage result.

Thus of the 1769 cases of internal and external tuberculosis reported, the percentage of recoveries, improvements, etc., is as follows:

Cured	.01½	per cent.
Substantially improved	.18+	"
Improved	.24⅓	"
Unimproved	.50	"
Deaths	.03+	"

When the number of successful results is considered, and in this number the substantially improved cases are included, it should be remembered that it is not an unusual result for tuberculous patients to improve for a time, even equal to that time covered by the report, under the seeming stimulus of a hope of cure by a new method, and especially when that method is strictly carried out under the best hygienic laws;—cleanliness, correct habits, rest, good food and good air. The incomplete reports received from places outside of Germany give results much less satisfactory. In Austria, and particularly in Vienna, the remedy is considered dangerous to life and of practically no benefit as a curative or diagnostic agent.

From France there comes only condemnation of the remedy. The reports of results of the use of the lymph in this country have been made in a fragmentary way, through the journals, and have therefore no great comparative value.

Conclusions as to the value of Koch's lymph based upon the foregoing statements are plainly as follows:

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First, Koch's lymph, a probable ptomaine, is a product of the bacillus tuberculosis in pure culture and is the real virus, the *materies morbi* of tuberculosis.

Second. When inoculated into a tuberculous patient, it intensifies and shortens the natural histological and anatomical changes of the disease, which are manifested clinically by the symptoms and signs attributable to the intensified morbid process.

Third. The remedy is a dangerous one but may be successfully used when the necrosed tissue and its contained bacilli can be rapidly and completely thrown out of or removed from the body.

Fourth. In all other cases excepting those mentioned in conclusion third, the remedy will be of but little or no benefit, and may do absolute harm by exciting a more acute form of tuberculosis, which may infect the whole body with the tuberculous poison.

Fifth. There is no evidence which supports the idea that it may give immunity against tuberculosis.

Sixth. It has a value, a dangerous one, as a means of diagnosis in doubtful cases of tuberculosis, but is of value only as a positive sign.

Seventh. By its discovery and use, Professor Koch has added emphatic and irrefutable evidence that the bacillus tuberculosis is the specific causative germ of tuberculosis.

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REMOVAL OF THE ARM TOGETHER WITH THE SCAPULA AND CLAVICLE FOR OSTEOSARCOMA OF THE HUMERUS.

By Dr. A. J. OCHSNER, B.S., F.R.M.S.

Assistant to the Chair of Practice of Surgery, Rush Medical College; Surgeon-in-Chief of the Augustana Hospital.

Read before the Chicago Medical Society July 6th, 1891.

During the past few years a number of important papers have appeared on the subject of the removal of the entire upper extremity—the most notable ones of these were those by Dr. Paul Berger and by Professor Adelmann. These papers, and the subject in general, having been discussed in this Society only a short time ago by our illustrious member, the late lamented Professor Parkes, in connection with a report of his two cases, it will not be necessary for me to make abstracts of them, but I may at once proceed to report my case. My excuse for doing this lies in the fact that there are still less than one hundred such operations on record, and consequently each additional case is of statistical value.

The patient, a young lady, Miss Fannie E., of Danville, Ill., nineteen years old, was referred to me by her physician, Dr. Morehouse. Her appearance was anæmic, her form slight, and her general condition showed the presence of long-continued anxiety and pain. At the upper extremity of her right humerus there was a tumor as large as two fists implicating the joint and immobilizing it. She gave the following history: Three years ago she noticed some swelling and pain in the region of her right shoulder, accompanied with a slight amount of stiffening in the joint. This condition of the joint was diagnosed as rheumatism, and treated with the result of a decrease of the swelling and an increase in the anchylosis. Eighteen months ago the patient was anæsthetized and forcible motion was resorted to. Passive motion was made daily after this. Soon after, a tumor was discovered in the upper end of the humerus. This increased slowly at first, but more rapidly later on. The patient had been well previous to this occurrence with the exception of an attack of pneumonia.

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The family history is good except that the mother died from tuberculosis of the lungs.

The patient came to me with a diagnosis of sarcoma of the upper extremity of the humerus involving the joint, which was confirmed by a number of surgeons.

I told the father that nothing could be done with any hope for relief except the removal of the upper extremity together with the scapula and clavicle, that this was a very bold and dangerous operation in the anæmic condition of his daughter, and that even after a thorough removal we could not have much hope of securing permanent relief. With this discouraging outlook the father felt inclined to abandon the idea, but the patient insisted upon having this last and only chance, with the request that the tumor be cut open before anything else were done in order to prevent the possibility of losing her arm on account of a mistaken diagnosis.

On April 4th, '91, I operated with the excellent assistance of Dr. Morehouse of Danville, Ill., Dr. Jay, House Surgeon at the Presbyterian Hospital, and Dr. Shaw, Junior House Surgeon.

The arm was carefully depleted by means of Esmarch's bandage in order to save as much blood for the patient as possible. Having made an incision in the tumor, confirming the diagnosis osteo-sarcoma, the center of which had undergone colloid degeneration, and packing this wound with iodoform gauze, I placed the patient on her left side and proceeded to remove the arm after the plan laid down by Paul Berger.

An incision was carried along the upper surface of the clavicle, then the periosteum was removed at its inner third, and the bone severed at this point by means of a metacarpal saw, a thin, flat metal retractor being placed between the clavicle and the periosteum to prevent the saw from injuring the subclavian vessels.

The distal end of the clavicle was lifted up, and two inches removed by means of bone forceps. The periosteum and the subclavian muscle were now separated by blunt dissection, bringing to view the pulsating artery and the distended vein. An aneurism needle was now passed around both vessels from behind forward, and both vessels ligated with a firm silk ligature just in front of the middle scalene muscle and above the first rib. The Esmarch bandage was removed from the arm and pulsation

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found to be absent. An incision was carried around in front of the shoulder and another one behind to a meeting point in the axilla. It was necessary to cut these flaps a little short in order to escape the skin overlying the tumor. An incision was then carried through the muscles in front. Coming down upon the axillary space, the vessels were grasped between forceps before dividing, for the sake of security. In cutting through the large vessels, not quite enough space was allowed beyond the ligature, but the bleeding was at once controlled by the use of forceps. Carrying the arm across the chest, the skin over the scapula was then dissected back, and the scapula dissected up, which completed the removal of the extremity. During all this time every bleeding vessel was at once caught, so the patient had lost but a very slight amount of blood. Notwithstanding this, the pulse, which had been very weak and rapid before the operation, became still weaker, so that the operation had to be completed with the foot of the table elevated. A considerable amount of shock was experienced upon severing the brachial plexus. All vessels were now tied carefully, two extra ligatures were applied to the subclavian artery and vein. The lymphatics of the axilla were removed, although no enlargement was perceptible. The posterior flap was perforated and a large drainage tube introduced; a second tube was placed in the lower angle of the wound, and the flaps were sutured with silk.

The time consumed, from the first incision to the tying of the last stitch, was forty-four minutes. The wound was dressed with iodoform gauze and cotton.

The patient, who appeared severely shocked, was put into a bed which had been thoroughly warmed, and she rallied nicely. Her appearance was very promising throughout her convalescence, which was carefully guarded by the house surgeon, Dr. Jay, and a most excellent special nurse.

On the evening of the second day occurred the highest pulse and temperature— pulse being 156, temperature, 102.4. These decreased to pulse 140, temperature to 101.2, on the evening of the third day. Both pulse and temperature remained nearly at this point for the first two weeks, when the temperature slowly sank to normal, the pulse remaining above 110 for four weeks.

The wound was dressed on the fourth day, as it was becoming

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uncomfortable to the patient; it was found to be in an excellent condition. The wound healed normally, with the exception of the openings occupied by the drainage tubes, which suppurated slightly.

Four weeks after the operation the patient could sit up in bed; a week later she went about in a wheel-chair; six weeks after the operation she was out of doors, and a few days later she was discharged from the hospital entirely well, with the exception of a few small granulating points.

It is easier to ligate the subclavian artery and vein by at once cutting through the pectoralis major and minor muscles, after resecting the clavicle, and following the external anterior thoracic nerve as a guide. I chose the other method because I had assisted Professor Parkes in two cases, in which he had followed this method, while, at that time, I had had no experience in the method just described, except on the cadaver.

A microscopical examination of the tumor proved it to be osteosarcoma.

I lay particular stress upon the advantage of a rapid operation and great skill in nursing the patient after the operation, because the injury is so severe that under the most favorable conditions the patient had all she could bear, while without these extra advantages the strain might easily have been too much for her.

I need not state that the surface to be operated upon and everything coming in contact with it, were carefully prepared with a view of securing perfectly aseptic conditions.

Thomas F. Chavasse, M.D., C.M.Edin., Surgeon to the General Hospital, Birmingham, has recently prepared a table of forty-four cases of removal of the entire upper extremity for tumors involving this part, between the years 1838 and 1890 in all parts of the world, which makes a retabulation at this time unnecessary.

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THE "TINCTIONSTHERAPIE" OF MOSETIG-MOORHOF IN THE TREATMENT OF INOPERABLE MALIGNANT NEOPLASMS.

By F. W. SCHMIDT, M.D.

Read before the Chicago Medical Society, June 20th, 1891.

The treatment of this class of neoplasms has been discussed a great deal during the last ten years, but since we know absolutely nothing of a positive character concerning the etiology of this group of diseases, very little or no progress has been made. The best explanations which have ever been offered can only be regarded as ingenious hypotheses, the proof for which is still wanting. I am greatly indebted to the distinguished professor for the facts which I am about to relate, but having had a number of interviews with him, and having watched the cases for several months, I am at least in a position to give an unbiased opinion of the cases under observation.

About six years ago Professor Mosetig-Moorhof began to experiment with different remedies upon epithelioma of the face, but with somewhat indifferent results, and very little was heard from this treatment until a few months ago. The fact that the pathological cell elements possess a relatively low resistance led him to employ his so-called "tinctionstherapie."

The growth of all neoplasms is due to a rapid proliferation of the pathological cells, and this results from the division of their nuclei. He thought that by preventing this division of the nuclei it might be possible to bring about a retrograde metamorphosis and thereby bring the process of cell proliferation to a standstill. The fact that the nuclei are very sensitive to staining fluids, and consequently easily stained, led him to try to stain them "*in corpore vivo.*" It occurred to him that the normal tissues might become only temporarily stained, while the neoplasm, whose cells possessed less resistance, might be prevented from proliferating or even become necrosed.

At first a one per cent. aqueous solution of analinum trichloratum was employed, but after four cases had been treated with

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this, in one of which it produced very alarming symptoms, it was dropped. In September, 1890, a 1:500 aqueous solution of *methyl-violet* was used, but this was replaced by a 1:300 solution, and of this latter solution from three to six grammes were injected at every sitting. This treatment is repeated every two or three days, and must be continued for a long time before a reduction in the size of the tumor can be noticed. It is quite unusual to see any local or general reaction, but six-gramme doses of a 1:300 solution have occasionally produced a slight hyperæmia of the neighboring tissues. The injections should be made either about two millemeters from the periphery of the tumor or into the base of the tumor itself. It is of course necessary to make these injections antiseptically.

After ten or twelve injections of a 1:500 aqueous solution of *methyl-violet* the diminution in the size of the tumor is almost always quite perceptible. By this method the tumors are gradually impregnated with the fluid. The size of the neoplasms is said to be diminished in one of two ways: Firstly, the tumors undergo a fatty metamorphosis and are absorbed, or, secondly, those having an ulcerating surface throw off larger quantities of secretion and thus rid themselves of the dead tissues.

The infiltration of the neighboring tissues and the swelling of the glands also gradually lessens. The pain, which is a source of such annoyance in nearly all cases, and which tests the patience of both the surgeon and the sufferer, disappears, as a rule, after a few of these injections. That terrible fetor which is so characteristic of carcinoma and makes life a burden for both the patient and his friends disappears altogether. Had the remedy no other effect than that of simply removing this, it alone would be an inestimable boon to the poor sufferers. Injections are now being made with a 1:500 aqueous solution of *methyl-violet*, and from three to twelve grammes of this are injected every two or three days. It has been employed in carcinoma of the uterus, vaginal walls, tongue and mammæ and sarcoma of the neck, osteosarcoma of the maxillæ, fibroma of the uterus and also in various fungoid tumors, with gratifying results. For promoting the granulation of chronic fistulous tracts it is an admirable remedy. When the discharges from an ulcerating surface are very profuse and offensive it is used as a dressing, either in a 1:100 solution

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or in substance in the shape of powder. As a dressing for venereal ulcers it has been used for some time, and is certainly to be preferred to iodoform in this class of cases. In neoplasms of the bladder it has been used as an injection in a 1:1000 solution and found to be of great service for alleviating the symptoms.

When a portion of a carcinoma is extirpated after having been treated with this remedy, it has a dirty whitish appearance which would at first lead one to suppose that the *methyl-violet* had not been taken up by the pathogenic cells at all, but when exposed to the air it gradually assumes a violet color. This is due to a reoxidization and proves that the *methyl-violet* has penetrated the cells. The professor believes that the deoxidization is due to the action of a toxine, which was discovered by Dantekiewicz. This toxine is found in carcinoma only. To prove the fact that the remedy is deoxidized the professor makes the following experiment:

Take about 30 c.c. of a 1:800 aqueous solution of *methyl-violet* and add to it a few drops of HCl and a few grains of metallic zinc. The solution will at once assume a yellowish color, and after a short time become almost perfectly clear. Upon neutralizing this with a solution of KOH a flocculent, whitish precipitate almost immediately forms, which upon exposure to the oxygen of the air, soon assumes its original violet color.

In conclusion I will say that I hope that various members of your honorable body will give this new remedy a fair and impartial trial, and, after due trial and consideration, pass judgment upon its merits or demerits as a therapeutic agent.

VIENNA, April, 1891.

[*For Discussion see Society Proceedings.*]

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THE GALVANO-CAUTERY IN LARYNGOLOGY, WITH CASES.

By GEO. W. WEBSTER, M.D.

Professor of Physiology, Chicago Medical College.

Read before the Chicago Medical Society June 20th, 1891.

The object of this paper is to produce evidence tending to show that the galvano-cautery, and especially the snare, is a decided addition to the armamentarium of the laryngologist, and the method entitled to legitimate recognition. As a rule it is condemned most loudly by those who have used it least, basing objections on theoretical grounds, and in most instances the objections urged are, it seems to me, not well sustained by the facts, nor by personal experience.

The varieties of cases in which I have used the cautery in laryngology with advantage are hypertrophy of the tonsils, cancer of the œsophagus with growth protruding into the larynx, papilloma of larynx, and abscess of the larynx.

In regard to the cautery in removal of the tonsils, I have used this method for three years, and *no other method* for two years.

In using the galvano-cautery, it is of prime importance that we have a handle so made as to allow the operator to make or break the current at will, and to at the same time operate the windlass with the thumb. The Flemming handle, or some of its modifications, is the instrument preferred by the writer.

It is equally important to have a current that will heat the wire quickly, and at the same time be controlled by a rheostat. Plantinum wire is the only material that can possibly give satisfaction, and some form of storage battery will be found most serviceable.

In removal of the tonsils it seems to possess the following advantages: 1. Consent of the patient, as there is neither cutting nor hemorrhage. 2. Absolutely, no primary hemorrhage, although the probability of secondary hemorrhage is probably not lessened. 3. Greater facility of application, especially in small hypertrophies, and in many children with small throats, where an instrument of larger size could not be easily applied.

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4. Better results because of lessened tendency to return, and less absorption after the operation. 5. In large hard hypertrophies, where hemorrhage is feared, and where the cold snare is recommended by some writers, some form of tonsil forcep is almost always needed to aid in raising the tonsil from its bed. The forceps of Fanenger and of Ingalls I have found the most convenient and valuable.

In using this method in public and in private practice in about one hundred and fifty cases, I have had no unpleasant results, and only one case of slight secondary hemorrhage.

In the removal of growths from the larynx, the cautery has the following advantages: 1. Perfect safety, as the current is never turned on until the growth has been firmly grasped by the loop. 2. A small instrument which, when in the larynx, allows one to obtain a more perfect view of the parts, thus facilitating greater accuracy. 3. Absolutely no hemorrhage, thus allowing growths to be removed piecemeal, at one sitting, which could not be done by any other method, where hemorrhage obscures vision. 4. In papilloma of the larynx, where the base is thus cauterized, there is, I believe, less liability to recurrence.

I would not be understood as advocating this method to the exclusion of others, nor as even intimating that it is applicable to all cases, but where any growth can be grasped by the loop, I believe it to be the best method.

Case 1. Miss O., twenty-six years of age, saleslady by occupation, general health good. Consulted me three years ago for laryngitis. At that time there was an acute inflammation, and the membrane in the interarytenoid space was thickened, and showed some rugæ when patient phonated.

Consulted me again May 15th, 1891. At this time the patient could only whisper, and she informed me that she had not been able to speak aloud for several weeks, and that for over a year she has been always hoarse, and much of the time completely aphonic, and that she is growing constantly worse, notwithstanding almost constant treatment by various physicians.

She says there is no pain in or about the throat, but complains of a tired feeling after attempted speaking. There was no swelling of the glands on the outside of the neck.

Family history reveals the fact that one sister died of pulmonary tuberculosis.

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Patient is large, strong, well-nourished and has normal temperature.

Laryngoscopic examination shows a general subacute laryngitis, and also reveals a rough, irregular growth of a slightly opalescent color, apparently very vascular, and occupying the interarytenoid space, and being separated into two lobes by a perpendicular fissure. It was almost a half inch in length from above downward and smaller in a transverse direction, and by its size and location mechanically prevented the approximation of the vocal cords by contraction of the arytenoid muscle, thus rendering phonation impossible. I informed the patient that I had never seen such a growth in that location and supposed it was papilloma, but that a positive diagnosis could be made only by a microscopical examination, or noting whether the growth recurred, and advised removal. This was consented to and the galvano-cautery was the method chosen.

After a thorough application of cocoaine (ten per cent. sol.) I passed the loop into the larynx, and after a few moments' of patient manuvering I succeeded in getting the loop firmly around it, and it was quickly removed without pain or hemorrhage. On inspection I was not quite satisfied with the appearance of the base, so I then introduced another form of electrode and cauterized more completely the surface from which the growth had been removed.

After the operation was completed the patient could speak aloud, but was somewhat hoarse.

Unfortunately, just as I was removing the loop from the mouth, the growth became detached and fell into a jar containing some blood, several quarts of water and masses of adenoid vegetation just removed, and I was therefore unable to secure and examine the specimen. The treatment after operation consisted in rest of the voice for one week.

Morphiæ gr. one-eighth the first night. Locally, iodoform in glycerine, ten per cent., applied once each day with cotton on applicator.

There was a little increase in inflammation the day of the operation, but on the second day the inflammation had decreased, and from that time on, the improvement was rapid and the patient began work as saleslady at the end of a week, although I

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objected to her doing so. The second week I applied each day a spray of silver-nitrate, fifteen grains to the ounce; the third week the same solution every second day.

The inflammation has now quite disappeared, the voice is as good as ever in her life, and she is able to sing fairly well, and that for the first time in nearly four years. Of course it is too early in the case to make a diagnosis, for it may have been tuberculous papilloma, but no one will deny, although all do not appreciate fully, the value of radical treatment in these cases, and this is especially true if they are tubercular.

Case 2. Mr. X. L., about twenty-eight years of age, strong, robust young man, sent to me last winter by Dr. Frank Cary. History of severe cold and sore throat. Laryngoscopic examination showed large abscess of the larnyx.

After applying cocoaine, I evacuated with guarded lancet. Considerable choking and coughing. Next day the abscess had refilled. I then introduced a cautery electrode in the place of former puncture and thus formed a round opening with some destruction of tissue, hoping thereby to facilitate drainage.

I then washed out thoroughly with peroxide of hydrogen.

There was no further refilling and the patient made a rapid recovery.

Case 3. Mr. W., fifty years of age, small stature, emaciated. Consulted me in October, 1890, on account of difficult deglutition. He informed me that he had experienced an increasing difficulty in swallowing, and that at that time it required constant effort for over an hour to swallow a small cup of coffee, and that no solid food had been taken for several weeks. He said he must get relief very soon or else die of starvation, and his appearance justified the statement.

Inspection of the outside of the throat revealed the fact that in the act of deglutition the larnyx did not ascend to the normal extent, that it seemed bound down and was less freely movable than normal. There was no infiltration of glandular structures in the neighborhood. The patient was free from pain and the family history was good.

On making a laryngoscopic examination, a large lobulated growth of a whitish opalescent appearance was seen apparently springing from the œsophageal opening, and acting as a valve, while

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one of the larger lobes projected forward, between the arytenoids, appearing to prevent the epiglottis from closing the larnyx completely in deglutition, and seemed to explain why the fluids, as he expressed it, "went the wrong way and choked him."

I applied a ten per cent. solution of cocoaine to the entire larnyx, and, after about six minutes, made a more thorough examination with the probe and found the growth to spring from the posterior wall of the œsophagus, immediately behind the larynx.

Thinking that possibly the growth, by its size and location, mechanically prevented the entrance of food, I determined to remove it.

This I had no difficulty in accomplishing, using the galvano-cautery snare, removing it in four pieces, there being neither pain nor hemorrhage during the operation. There was no reaction of any consequence subsequently. On attempting to pass a bougie into the œsophagus, I found a stricture at the upper part, although deglutition had been somewhat facilitated by the removal of the growth.

Microscopic examination revealed the fact that the growth was a ring-shaped carcinoma. After this time I dilated the stricture about every five days, and twice each day I passed the stomach tube, giving the patient each time nearly a quart of milk together with two eggs.

Sometimes peptones were added instead of eggs, and for the last two months an ounce of brandy was given with each feeding, at the patient's request.

For a short time the patient gained somewhat in weight, and quite materially in strength, going about the city freely and seemingly happy, and he said free from pain. At home he took some coffee and occasionally a little soup or broth. This treatment was continued for seven months, when the patient died.

One interesting and troublesome feature of the case might be mentioned. From the first to last it was impossible to introduce the stomach tube without the aid of the laryngoscope, thus necessitating personal care of the patient.

There was no return of the growth in the laryngeal cavity, but the extension was downward.

70 State Street.

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A REPORT OF CASES OF COMPOUND FRACTURES OF THE EXTREMITIES.

By Dr. ADOLPH GEHRMANN.

From a Paper read before the Cook County Hospital Clinical Society, July 2d, 1891.

During the nine months ending April 1st, 1891, there were admitted to the regular service in this hospital thirty-eight cases. Thirty-one of these cases affected the lower and seven the upper extremities. Of these, twenty-four were fractures of the leg; twelve of both bones; eight of the tibia only; three were Pott's fractures, and one in the metatarsus. In the upper extremity there were seven fractures, five being of the forearm and two of the humerus. It is worthy of notice that of twenty-four cases of injury to the leg, twenty were on the left side. It may be that this is due to the position of the body when at work, in that the left leg is advanced and is therefore more likely to be caught between timbers or other heavy objects. On the other hand, of seven cases of fractured femur, five were upon the right side. The final results in these thirty-eight cases is shown as recovery in twenty, or fifty-three per cent.; improvement in nine, or twenty-three per cent.; death in eight, or twenty-one per cent.; result not known in one, or three per cent. Thirty cases were recent, while eight were infected at time of admission. Of the thirty clean cases, nineteen recovered completely; eight died, seven from other causes and one from the injury. Three cases improved, two of these suffering amputation and one being discharged upon request six days after admittance. Of the eight previously infected cases, the histories show that two recovered; three improved, and three underwent amputation. From a review of the histories of the above and a careful comparison of other cases, it can be readily seen that as yet there is no treatment of compound fractures in this hospital which can be called uniform. Upon one point only can any unanimity of opinion be shown, namely: the need of immediate operation.

The methods of treatment employed in thirty-one cases were as follows:

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Thirteen cases, forty per cent., primary disinfection, gauze or no drainage, and in most cases suture of skin wound. The results obtained were:

Good recovery.....76 per cent.
Slight amount of pus, ending in fair result.....16 per cent.
History incomplete in.....13 per cent.

Of these thirteen cases, representing forty per cent., eleven were recent and two infected.

In fifty per cent., or fifteen of the thirty-one cases, primary disinfection, in connection with the use of drainage tubes or bone suture, was employed. Results here were:

Recovery, without pus.....13 per cent.
Recovery, with necrosis around tubes, or necrosis of bone, ending in final union.....66 per cent.
Amputation in three cases, resulting in two recoveries and one death.....20 per cent.

Nine of the fifteen cases referred to above were recent, while six were infected.

Primary amputation was undertaken in ten per cent. of those treated; one of these being recent and two infected. All made good recoveries.

Comparing the cases treated by gauze, or no drainage, with those in which tubes or bone sutures were used, it is seen that with almost the same conditions, but with a slightly better class of cases in the first instance, pus was found in the former in twenty-four per cent., and the latter in seventy per cent. This gives a result more marked than that shown in the hospital report of July 1st, 1890, in which fifty per cent. of the cases wired suppurated, and thirty-one and one-fourth per cent. of those not wired suppurated.

Among the thirty-eight cases are several of special interest. The eight histories on which death is recorded show that the patients were often severely injured. One case, that of a girl, having a compound fracture of both bones of right leg, caused by a fall of fifty feet, was complicated by compound fracture of the nasal bones; lacerated wounds of face; fracture of base of the skull; lacerated wounds of left hand; simple fractures of right femur and tibia. This patient died three hours after admission. Most of these patients were not treated, and I have therefore not

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considered them in the review of thirty-one cases, as they died almost immediately or had other injuries requiring more attention. The first history recorded is that of the only case in which death can be attributed to the compound fracture.

*Case 1. *Compound fracture of both bones of left leg; suppuration; amputation through thigh; death.*

Matt N., November 22d, 1890. Upon admittance patient showed fracture of tibia three inches above ankle and of fibula in two places, one at malleolus, the other two inches above fracture in tibia; considerable displacement. Operation: Ether. Incision on inner and outer sides of limb; thorough irrigation. Rubber drainage tubes were inserted and the wound partially sutured with silk. Patient developed temperature.

November 24th. Dressed. Leg œdematous and suppurating; cellulitis extending toward knee; dosrum of foot blackish. Irrigation: bichloride, peroxide and iodoform and ether.

November 26th. Dressed. Same condition.

November 29th. Continuous irrigation. Boric acid.

December 3d. Patient has had chills. Ether; amputation through lower third of thigh. After amputation patient's temperature continued high, 101⅘°, and he died upon the fourth day.

This one case gives an approximate mortality percentage of 2.53 per cent. of cases actually treated.

We note the difference between this mortality and that recorded before antisepsis. Kœnig gives a death rate of thirty-seven to forty per cent. in private practice, and twenty-three per cent. from gunshot fractures in the practice of military surgery.

The two following histories illustrate injury to the elbow-joint. There is some dispute as to the proper method to be followed in treating suppurating compound fractures involving joints. According to Bardenhauer, primary excision of the joint has given the best results. That this may be true is shown by the first history.

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*In regard to this case, it was subsequently learned, that the patient was fifty-five years of age, that his leg had been injured by a turning bridge, and that it was so badly crushed that amputation was deemed advisable. This was positively refused until proposed by Dr. Fenger some ten days later.

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Case 2. *Compound fracture of olecranon; dislocation of radius; excision of elbow; recovery with good motion.*

Frank R., July 30th, 1890. Examination shows a three inch transverse lacerated wound which opens the right elbow joint. Olecranon fractured and separated about one inch from ulna. Wound contains dead tissue and is full of dirt. Operation on August 1st. Patient etherized; wound found gaping and exposed; much purulent discharge and sloughing of muscle. Olecranon drawn up and lying in necrotic tissue. Dislocation upward of radius and lower fragment of ulna. Removed small part radius, ulna and lower end of humerus. Sutured partially; tubes; arm flexed; hand elevated; constant boric acid irrigation.

August 4th, 1890, removed dressing; little sloughing, some œdema; arm dressed as before.

August 8th, removed dressing again; skin found reddened beneath dressing and some sloughing around tubes. Tubes removed and replaced by gauze. Plaster-paris cast, elbow flexed, forearm midway between pronation and supination. August 14th. Removed cast: gauze slippery, otherwise cast is clean. August 21st changed cast, very slight discharge. September 11th, collodion dressing. Healing complete except a triangular granulating surface about two cm. on each side at tip of elbow. Passive motion does not give pains and is about of normal extent. Patient can voluntarily flex and extend forearm to considerable extent, *i. e.* 60°. Also can pronate and supinate to some extent. Can extend fingers with some force against opposition, but flexor muscles of fingers are weak, probably due to approximation of their attachments. Voluntary motion is improving steadily.

Case 3. *Compound fracture of olecranon; suppurating panarthritis of elbow joint; nailing of fragments; excision of joint for osteomyelitis of bones of arm; amputation; recovery.*

Jerry K., January 18th, 1891. Patient was admitted to hospital, giving history of having been struck ten days ago upon back of elbow with an ice-pick. Examination showed that arm was much swollen and very painful. The next day patient was anæsthetized and a free incision made along the arm to the outer side of the joint. This showed that there was a fracture of the olecranon, and that the elbow joint was filled with pus. The joint was irrigated and a temporary dressing applied. The next

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day the attending surgeon operated in clinic. Patient at this time showed marked signs of sepsis. The olecranon was nailed, using three steel nails to the ulna, and about half an inch was taken from the head of the radius. Several drainage tubes were introduced. Patient continued to have temperature and pain. The arm was dressed every second day for about a week, when the condition became so severe that something had to be done.

Patient was anæsthetized. All sutures, drainage tubes and nails were removed and the joint freely opened. The ends of all three bones were necrotic and the joint ligaments were loose and soft. Two large drainage tubes were passed through the joint and several were inserted into the surrounding tissues where there was evidence of suppuration. External wounds packed with gauze. Large antiseptic dressing. Starch bandage. Patient dressed daily. Complains of great pain, often requiring an anæsthetic for dressing.

Two weeks later it was again decided to operate, as the arm was suppurating profusely and showed signs of cellular infiltration. General condition very poor. Again anæsthetized and arm opened. Section of the humerus showed osteomyelitis. Radius and ulna showed the same.

The inferior half of humerus, the upper two-thirds of the ulna and a long slice from the posterior surface of radius were removed, leaving the attachment of the biceps. The tissues were curetted and cauterized. There was now an incision ten inches long upon posterior aspect of arm. A few sutures were introduced and the wound packed with gauze. Patient put to bed and stimulated; recovered very slowly from operation. Three days later at first dressing there was no pus, but there was sloughing because of the cauterization. Later, pus appeared in upper angle of wound, evidently coming from the humerus and about end of radius.

During next six weeks healing proceeded nicely, but patient's hand and forearm were useless and very œdematous. He could not tell what finger was being touched. Amputation was done about two and a half months after injury. Recovery and good health.

Case 4. *Compound fracture of right femur into knee joint; partial excision of joint; recovery with lateral motion.*

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November 21st, 1890. Andrew P., age forty-four. Patient was admitted four hours after injury. He was then in good condition, but alcoholic. Anæsthesia. Examination showed that both condyles of right femur were detached, that there had been comminution of the bone, and that pressure upon the patella caused partially clotted blood to flow from the wound on outer aspect of thigh. Operation: The skin wound was enlarged in the direction of the limb and a similar incision made on the inner side. Some bone was removed, and then, finding it impossible to reach the fragments, the usual semilunar incision below the patella for excision of knee was made. The joint was cleaned out and about one inch sawed from lower end of femur. The fragments were wired and the wound was thoroughly cleaned, drained with tubes, and sutured. A posterior splint was applied and the limb well elevated.

During next two weeks patient developed delirium tremens. At end of this period dressed. No pus. Tubes filled with fibrin. Irrigation with $\frac{1}{3000}$ bichloride solution. The limb was now put up in plaster cast having an iron interruption, the strap-iron passing along inner and outer side of limb and being firmly imbedded into the body portion of cast.

The case was dressed every six or seven days. A very small amount of pus appeared around drainage tubes, but disappeared when tubes were removed.

February 1st, 1891. All openings closed. Body cast was removed. The limb was in good position, was short one and three-quarters inches and showed some lateral motion, but no flexion. Continuous plaster cast applied. Three weeks later removed. Condition the same. Patient discharged and advised to wear some support to knee.

Case 5. *Recent compound fracture of both bones of left leg; antiseptic cleaning; drainage tube; sloughing along tube; recovery.*

January 24th, 1891. Frank N., age twenty-four. Patient's leg was broken by being struck by a horse. Examination shows transverse fracture of both bones of left leg; lower third with a skin wound one and one-half inches in length over crest of tibia. Treatment: Antiseptic cleaning of limb and wound, enlargement of wound downwards to the left, curetting of ends

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of fragments and reduction of fracture. A rubber drainage tube was placed in the bottom of the wound, the ends protruding, and the wound sutured. Continuous plaster cast. Later, addition of iron splint and fenestration of continuous cast.

At the first dressing the drainage tube was filled with a firm, yellowish clot. At next dressing there was a little pus. Good union and healing of wound resulted, but there was a thick cicatrix where tube had been.

Case 6. *Compound fracture of right femur; compound comminuted fracture of both bones of left leg; femur dressed, union, recovery; left leg infected; amputation; recovery.*

August 6th, 1890. John M. Wound on outer side of thigh enlarged and cleaned. Drainage tubes were passed to the seat of fracture. Antiseptic dressing. Left leg opened by free incision, all loose fragments removed, and the parts thoroughly cleaned. Numerous drainage tubes were inserted. The limb was heavily dressed and both limbs were put up in plaster casts. Patient had temperature about 101° F.

August 8th: Cast on left leg removed as it was soaked with blood. Wound again cleaned. August 9th: Right thigh dressed; seemed clean. Drainage tubes were removed. Hamilton splint and plaster. August 12th: Left leg dressed. Wound appears gangrenous in places. Amputation advised. August 13th: Amputation four inches below knee. Patient rallied well after operation. Wound in right thigh was dressed a few times. It closed rapidly, and this was followed by good union of the femur. Amputation healed primarily.

Case 7. *Old ununited compound fracture of both bones of leg; wired; suppuration; removal of wire; curetting of bone; cast; union.*

July 9th, 1890. Stephen L. January 1st, 1890, patient fell and suffered a compound fracture of bones of left leg. Wired at Michael Reese Hospital. Evidently suppuration and non-union. Admitted to County Hospital. Operation: Free incision. Both ends of broken bones necrosed. Resected and fastened together with strands of fine silver wire. Wound sutured and gauze drainage. Fenestrated cast.

July 14th: Dressed. Gauze removed; some pus. July 19th: Dressed every second day; looks well. October 7th: Some union;

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part of wire removed. October 16th: Pus continues. Denuded bone. Old wound was again opened and the other wire removed. The tibia was osteomyelitic and was extensively curetted. No wire or nails, no sutures. Limb was put up in plaster cast. History does not state subsequent condition of case.

Case 8. *Compound fracture of tibia; dressed outside; antiseptic treatment; eczema from dressings; union; recovery.*

August 5th, 1890. Frank C. Injured by runaway team. Leg partially cleansed before admission to hospital. External parts thoroughly cleansed and plaster-paris cast applied. Skin opening opposite seat of fracture, *i. e.*, middle and lower one-third, and not over one-fourth of an inch in length. Edges united by horse-hair sutures. On the 6th of August slight temperature; removed cast under ether; everything dry; slight œdema along tibia; longitudinal incision and small clot found; tube therefore inserted from before backwards; cast applied as before; no cause for temperature other than clot. On seventh, cast removed and considerable blood found in dressing; no pus and no odor. Curetted ends of bones, enlarged opening slightly and inserted larger drainage tube. Œdema along tibia less; no tenderness. On the ninth, leg dressed; no pus, but some odor to discharge. Tube patulous; irrigated; used Tr. iodi and blanket splint, discarding cast.

September 3d. Discharge has diminished, but bit of bone remained uncovered until now. Plaster-paris cast from toes to mid-thigh. September 20th: Discharge having come through, cast removed; exit wounds closed; blanket splint. Severe eczema from dressings. September 21st: Secretion soaked through everything and wet bed; redressed as before. Eczema very persistent and severe. Dressed skin with subnitrate of bismuth and boric acid. No motion at point of fracture. All of the incisions have healed.

Case was now dressed every second day for two weeks and then every third or fourth day until eczema had entirely subsided. When discharged, October 1, there was perfect union and good movement in the neighboring joints. The skin was normal.

Case 9. *Compound dislocation of left tibia; fracture of left fibula; antiseptic cleaning; union; recovery with good motion.*

January 3d, 1891. Dan B. This patient, while intoxicated

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and wrestling, turned his ankle. Physical examination shows inner malleolus of leg protruding through a lacerated wound over inner aspect of ankle. Wound is two inches long and the deltoid ligament is completely separated from its attachment to the malleolus. Fibula is obliquely fractured about two inches above external malleolus. Treatment: Patient etherized; left leg and foot rendered as clean as possible; wound on inner aspect of foot and ankle enlarged; irrigated with $\frac{1}{4000}$ Hg. $Cl._2$ solution; packed with iodoform gauze, and dressed with bichloride dressings. Immobilization secured with temporary plaster cast. Seven days after the first dressing the old cast was removed, and as suppuration had not occurred a permanent cast was applied. On February 14th, 1891, cast was removed and exposed a small granulating surface on inner side of ankle. Good bony union had occurred. Light cast was applied which reached from toes to middle of leg. On February 21st cast again removed, showing perfect motion in ankle joint and healing of wound.

Case 10. *Compound fracture of both bones of right forearm; extensive laceration of tissues; antiseptic cleansing; drainage; plaster cast. Discharged by request.*

January 28th, 1891. William S., age twenty-eight. Patient got his arm between pickets of a fence as he was getting from a train. Fracture of both bones near middle. Lacerations along posterior aspect of limb. Torn muscles protruding. Operation: Anæsthesia. The arm was thoroughly cleaned. Drainage tubes were inserted and the wounds partially sutured. Iodoform gauze around the tubes. As the displacement was very great the arm was put up in a plaster cast in extended position.

January 30th. Dressed. Cast removed. Very slight amount of pus at one tube. Reapplied cast. February 3d: Dressed. Some pus. Not as much swelling, but there is some tension on sutures. February 5th: Patient desires to go home. Dressed again for that purpose. Condition same as before.

Case 11. *Compound fracture of humerus; antiseptic treatment; gauze drainage; recovery.*

August 14th, 1890. Mike M. Examination shows fracture of humerus at upper and middle thirds, with a small punctured wound on outer side. Treatment: The arm was thoroughly cleaned and the opening in the arm enlarged and the wound

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thoroughly cleaned. The bones were brought in position and drainage provided by a strip of iodoform gauze. Antiseptic dressing and cast. Patient shows signs of pneumonia in left lung. Next dressing, gauze was removed and the wound sutured. Result: Good union of bone; no suppuration.

From the cases of compound fractures that we have had, we learn that an uncomplicated case of ordinary severity is no more dangerous than a simple fracture; our percentage of mortality for such cases during nine months being only 2.5 per cent. And this might have been eliminated had rational measures been instituted. During the previous eighteen months there is also record of one death that can be attributed directly to the fracture. In this case there was suppuration and death from sepsis. We next notice that the best results are obtained when the treatment is least meddlesome. Skill in adhering to detail, accompanied by the effort of natural agencies to reduce the injury to the condition of a simple fracture, are chief factors in success. It is also learned that the time necessary for recovery need be little longer than that from a simple fracture.

The indications in treating compound fractures are:

1. Not to make a hasty examination:

2. To operate. Every case demands an operation. No treatment can be rational and be expectant.

3. To produce the condition of a simple fracture as soon as possible. This should at least be accomplished at the end of the third dressing.

4. Careful immobilization and position of the limb.

5. Suppurating compound fractures are to be treated by free incision and drainage.

COOK COUNTY HOSPITAL, CHICAGO.

[*For Discussion see Society Proceedings.*]

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A CASE OF FRACTURE OF, AND DISLOCATION BETWEEN, THE TENTH AND ELEVENTH DORSAL VERTEBRÆ, WITH PRESENTATION OF THE PATIENT.

By ALBERT I. BOUFFLEUR, B.S., M.D.

Assistant Demonstrator of Anatomy, Rush Medical College; Attending Surgeon, Cook County Hospital, Etc.

Read before the Chicago Medical Society July 20th, 1891.

It was my intention to present this case, and two others, with a paper which I have under preparation on the general subject of Spinal Injuries, but I have not had time to prepare an exhaustive paper on the subject, and as the patient is very anxious to visit his brother in New York, I will leave that to a future time and present to-night only a brief report of the history and treatment of this case, and the patient himself to show the results.

J. K., aged thirty-one years, teamster, German. About 10 A. M. on the 11th of March, 1891, he was riding on a load of brick, and while driving under a low shed was struck just below the nape of the neck; while his body was in an extremely stooped position. As the wagon proceeded the ends of his vertebral column were brought nearer to each other than the anatomical continuity would permit, and consequently he sustained a fracture and dislocation of the vertebræ which will be described below. I saw the case about five hours after the accident and obtained this history of the injury. At the time of the accident he felt "something break," and after the wagon had cleared the shed he was lying flat on his back on top of the load. He tried to get up, but found that he could not elevate his trunk or move his legs at all. In answer to his cries friends came to his assistance and lifted him from the wagon and tried to stand him up, but his legs would not support him; then they tried to set him up in a chair, but the slightest relaxation of their support caused him "terrible pain," as he put it. When I saw him he was complaining of severe pain in the middle of his back and over the front of thorax and abdomen, and also of a sensation as though a strap was fastened around him about the umbilicus.

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Examination: An immense swelling over the whole dorsal region was noted, also a marked deformity of the back. It was found that there was a marked prominence about the eleventh vertebræ and an equally marked depression just above it. The immense diffuse swelling was soft and semi-fluctuating, being caused by extensive extravasation of blood throughout the subcutaneous tissues. Palpation at the point of injury caused severe pain. The blood-clot beneath the skin was so extensive and thick that we were unable to determine positively the presence of crepitus, though at times we thought we could detect it. Upon further examination, I found that there was complete motor paralysis below the umbilicus, including paralysis of the bladder and rectum, with hyperæsthesia of the corresponding surface,—paraplegia dolorosa.

There was no reason to doubt that we had compression of the cord, and that the compression was caused by direct counter-pressure of the two vertebræ. That the cord was not pulpified nor completely severed was shown by the hyperæsthesia which indicated an irritation of the sensory nerves and not a complete interruption of the cerebro-peripheral continuity.

Being uncertain as to the presence or absence of a fracture of any of those parts of the vertebræ which enter into the formation of the spinal foramen, and remembering that a dislocation of one vertebra upon another is quite invariably accompanied by fracture, more or less extensive (of the rims at least), of the bodies of the vertebræ, I tried reduction by extension and counter-extension very cautiously. The teachings of Brown-Sequard, "that the ascending inflammatory lesions of the cord, which follow injury to the spine, are caused by the irritation of fragments of fractured bone," caused me to think it inadvisable to try forcible reduction by great extension, rotation, etc., and as there was a probability of an accompanying hemorrhage about the cord an operation seemed, to me, the only rational and scientific procedure. There had been no improvement whatever in the five hours following the accident. The patient readily consented to an operation, which I performed about seven hours after the accident, with the valuable assistance of Drs. Bush, Piper, Gehrmann and Keyes.

At this age it is needless to say that the field of operation and everything which could in any way come in contact with the

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wound was rendered aseptic. Chloroform was administered with the patient in a semi-prone position. An incision five inches long

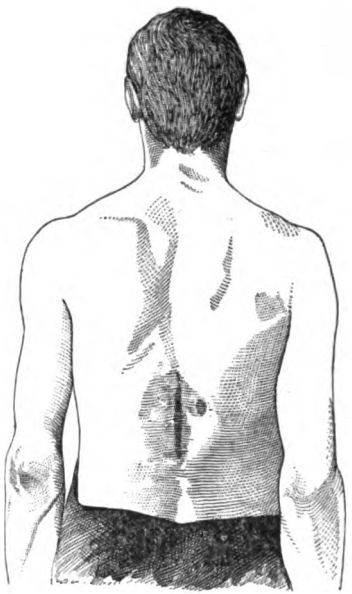

FIG. 1.—Showing line of incision and point of drainage.

was made in the median line. After cutting through the superficial fascia, which was distended to the thickness of about one and one-half inches by extravasated blood, we found that the muscles of that region, the vertebral apponeurosis, and all the intervertebral ligaments had been ruptured transversely, in fact broken. The tenth vertebra was found dislocated forwards upon the elventh, the laminæ of the tenth resting on the body of the eleventh, with the flattened cord between. I could not detect any fracture of the spinal arches, but found fractures of the articular processes, fragments of which were removed. The introduction of the finger down to the cord determined the fact that the spinal canal was filled with a firm extra-dural blood-clot which was easily broken down by the finger. Considerable hemorrhage followed the withdrawal of the finger. Irrigation with quite warm sterlized water served the double purpose of washing out the clots and stopping the hemorrhage.

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The anterior and posterior longitudinal spinal veins, the former of which are, normally, nearly the size of a lead-pencil, had been severed. The interval between the transverse processes of the two vertebræ easily admitted the finger, which detected a large blood-clot anterior to the bodies of the vertebræ in the posterior mediastinal space. It was removed by irrigation. All hemorrhage having been controlled, reduction was effected by following the rule which the late Professor Gunn offered concerning reduction of dislocations of the hip, and which is quite as applicable in all dislocations as in those of the enarthrodial joints, viz: "First, place the parts, as near as possible, in the position in which they were at the time of escape; and, second, reverse the force." I followed this as much as possible by first flexing the trunk, and second, by making extension and counter-extension from the shoulders and legs, and local elevation of the upper segment with depression of the lower. The vertebræ were thus brought into position, but the articular processes would not approximate properly, and on slight motion of the body would slip by each other. To maintain the parts in proper position, I connected the two spinous processes by means of a very large silk ligature, inserted through drill perforations of the upper part of the tenth and the lower part of the eleventh spinous processes near the laminæ. By this means we were enabled to completely reduce *and maintain* the segments in proper coaptation.

Owing to a natural tendency to ooze, it was deemed advisable to use tubular drainage, so as to prevent the possibility of pressure by the reformation of a blood-clot near the cord. Accordingly a small rubber tube was placed anterior to the vertebræ and out through the wound, while a large short tube was inserted down to the laminæ, between the tenth and eleventh vertebræ, and brought out through an opening made about two inches to the right of the first incision. The torn ends of the muscles were then accurately coapted by means of silk, the wound dressed and a plaster-of-paris cast applied. The patient remained in a prone position, with upper part of chest and shoulders somewhat elevated, until the cast had dried.

There was nothing particularly irregular in the history of the case during the stage of wound healing and complete repair. He had involuntary bowel movements for two days and had to be catheterized for a similar length of time.

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During the second twenty-four hours had a temperature varying from 99° to 101.2° with rapid and labored respirations—thirty-two to thirty-six per minute. He felt very well, however, and took abundant nourishment. We considered the symptoms as indicating only fermentation fever, and as the kidneys were secreting an abundance of urine, we did not think any medication necessary.

On the morning of the 13th, forty hours after the operation, voluntary use of the gluteal muscles was present to a slight degree. Twelve hours later could rotate the limbs quite freely and could adduct them about eight inches each.

March 14th. No bowel movements. Could urinate voluntarily. Morning temperature, normal; evening, 101.2°. Respiration 20 to 24.

March 15th. A. M., temperature 99°, but as it was 100.6° at noon a laxative was administered; P. M., temperature 101.2°, which subsided after free catharsis to 99.4° and respiration to 24. Hamstring muscles could be used to slight degree.

March 16th. Began to have voluntary bowel movements. Motion manifest in the flexors of the toes. As there had been a little temperature for thirty-six hours (99° to 101.2°) it was deemed advisable to dress the wound. A fenestra was cut over the site of the operation. The dressings were found saturated with a reddish colored fluid. No odor of decomposition. Ends of tubes occluded with blood-clots, but no evidence of blood-clots deep in the tubes or wound. Irrigation with sterilized water and new dressings applied.

March 17th to 20th, inclusive. Temperature was 99° or less. Gradually obtained use of muscles of legs and feet and lastly of the quadriceps extensors. Some of the movements were as yet weak and uncertain in their execution, but progressive improvement was appreciable in all the muscles. The bowel movements having soiled the cast it was removed on the 20th. Wound perfectly clean and union by "primary intention." Drainage tubes removed and new cast applied. There being no rise of temperature or other unfavorable symptoms the cast was allowed to remain on four weeks.

Five and one-half weeks after accident cicatrix found to be firm. No discharge and only small bunch of exuberant granulations

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over drainage holes. These were removed and surfaces healed within a week. During this week he remained in bed without a cast. About May 1st a cast was applied and he was allowed to be around in a wheel chair, and then with crutches, which he continues to carry merely as a means of safety to prevent any mishap. The last cast was removed about the middle of June.

This case presents points of great interest, and it may not be out of place, even in this report, to mention a few of the more important reasons why operative measures were, in this case, justifiable. Horsely's belief that "operation should be resorted to in all cases where displacement or crepitus indicates compression, and where extension directly after the accident clearly fails to reduce the deformity, provided there are symptoms present which indicate interference with the functions of the cord," is undoubtedly more in keeping with the step of modern surgery than the statements of Hutchinson and L. Clark, who sweepingly condemn all such operations as unjustifiable. The practice of great extension and forcible rotation is certainly far from being a safe procedure, in any case, since by the forcible movement of a fragment which may be in close proximity to, or in contact with, the dura or the cord itself, an extensive laceration of the meninges and of the cord substance might be produced.

As "the proof of the pudding is in the eating," so the proof of the justifiability of an operation is in the pathological conditions found and the success of the efforts for their removal. In this case we encountered three important pathologico-etiological conditions which we were able to remove. First, small fragments of bone, which, as before stated, might cause a fatal inflammatory process; second, extradural extravasation of blood. Hutchinson states that "he has never seen it to the extent of possible compression," but Oldknow, Stephen Smith, Jones and Willett have reported cases in which extravasation of blood was the cause of compression. In this case the spinal canal and the surrounding parts were filled with firm blood-clots, and I do not believe that reduction simply would have relieved all of the compression. Third, dislocation, etc. As a result of operating we were able to effect a complete reduction of the articular processes, as well as of the bodies of the vertebræ, and to employ efficient means for

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the maintenance of the reduction, and also to make an anatomical coaptation of the divided muscles, etc., all of which, of necessity, add to the appearance, strength and usefulness of the spine.

From the conditions noted, I believe that operative procedure was justifiable; as for the result, I present the patient.

738 Washington Boulevard.

[*For Discussion see Society Proceedings.*]

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A CASE ILLUSTRATING THE BENIGN POWER OF TUBERCULIN.

By E. WYLLYS ANDREWS, M.D.

Professor of Clinical Surgery, Chicago Medical College, etc.

Read before the Chicago Medical Society, July 6th, 1891.

The following case was a typical one of tubercular knee-joint disease, with the added diagnostic evidence—such as it is—of a distinct reaction to Koch's lymph, and in which very early excision of the whole joint gave an unusual opportunity to study the local changes produced by the agent.

The unreasonable urgency of the patient compelled me to perform this operation at a time when I believed that reparative changes leading toward complete resolution were already in progress, and thus to obtain a specimen illustrating the remarkable power of the agent to induce tissue change, and its benign method of co-operating with nature in overcoming disease. After inspecting the tissues involved, I was more than ever convinced that a cure could have been obtained without removing the joint, and of course with a far better limb for use than excision affords.

The patient came to me from Springfield with the fixed purpose of having operative treatment, and I found it difficult to gain his consent even to the delay necessary for the diagnostic use of tuberculin. However, I did begin its systematic use, and carried it on until reaction ceased.

When first seen the patient, a man æt. forty-two, had suffered for a year from chronic tubercular enlargement of the left knee of typical form. There was a spindle-shaped enlargement of the whole joint, slight effusion in the capsule, and considerable stiffness and pain upon forced movements. The distension was slight, but distinct, and there was moderate soreness upon pressure over the patella and both condyles. No sinuses appeared about the joint, which measured sixteen inches around, or one and one-half inches more than its fellow. There was no history

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of injury leading up to this disease. It was such a case in general aspect as would at once be classed as arthritis of tubercular origin; but, as subsequent investigation showed, an unusual condition. I was led carefully to consider whether an error in diagnosis could not have been made, and an old aneurism in the bone, a malignant osteoma, or some form of sarcoma, been overlooked.

The reaction to tuberculin being excluded as of diagnostic value, it is still clear to my mind that this case was one of ordinary tubercular osteitis. The local signs were entirely those of the latter affection, and no unusual cause of enlargement and irritation could bring about all the typical appearances of this familiar disease.

The use of tuberculin was begun with the temperature at ninety-nine degrees.

Reactions were as follows:

March 25th, gave .003. No reaction.
March 27th, gave .005. Temperature rose to 100.4°.
April 1st, gave .011. Temperature rose to 102.6° from 98.6°
April 5th, gave .012. Temperature rose to 103.2° from 99. °
April 8th, gave .012. Temperature rose to 100.2° from 98.6°
April 10th, gave .015. Temperature rose to 100.4° from 98.6°
April 13th, gave .015. Temperature rose to 100. ° from 98.6°
April 15th, gave .015. Temperature rose to 99.6° from 99. °

In each case local reaction was noted in the form of swelling, increased tenderness and pain upon movement. From this time the injections were not used, and a steady improvement occurred in the condition of the knee, but as the patient was persistent in demanding it, I reluctantly consented to operate and performed the typical excision May 27th, or twelve days after the last injection of tuberculin. In this case I buried the wires, which I much prefer to drills or nails. Union was complete in about a week in the soft parts, and bony union seems to be progressing very well. The wound has required no dressing since the first sutures were removed.

I therefore removed the ends of those bones twelve days after the last injection of tuberculin, and twenty-two days after the last decided reaction, and the condition found was interesting to me, and wholly unlike any knee joint I ever cut down upon.

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Of course in this operation we expose the diseased bone in a manner more thorough than in any other joint.

It is usual to find in these cases about the following pathological condition: In one or all the bones will be seen upon section dark congested foci in the cancellated tissue. These are tubercular foci. According to the stage of the disease and its extent they are small and few, or large and numerous. They contain cavities of greater or lesser size, filled with fungating masses, and lined with red granular tissue studded with grey, small nodules. These cavities tend to coalesce and form large caverns, which are filled with caseous debris and small necrotic fragments, but they are at first confined to the cancellated bone, and this is characteristic of tuberculosis. It lets the compact bone alone.

Around these foci, or colonies, the bone becomes softened by rarifying osteitis until it is so soft that the finger-nail easily disintegrates it. The whole end of a long bone often becomes so softened. Should the disease be limited to this stage, a gradual disappearance of this congested appearance takes place and total resolution occurs. I believe this is common in true tubercular disease, and I also may add that, in my opinion, almost all joint diseases are tubercular.

Should resolution not take place, necrosis of a segment of the end of the bone, in a wedge-shaped piece like an infraction, is a very common occurrence. Necrosis is characteristic of bone tuberculosis. It is very common in caries of the spine, of the hip and the knee. Should no necrosis of a large piece of the articular end occur, a discharge of the debris of the tubercular cavity or cavities, often into the joint, is likely to take place, and a general participation of joint cavity with or without involving the other bones. With this picture in my mind, confirmed by the diagnostic reaction of the lymph, my surprise was great to find no trace whatever of any ulcerating cavities, but the following condition:

The lower six inches of the femur was a shell of bone, so thin that it could be bent inward by a pressure of the finger, like a thin dried gourd.

My saw passed with one or two strokes completely through the widest parts of the condyles, leaving a surface of bone one-eighth of an inch thick, and smoothly filled with firm, healthy

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blood clot, as was the piece removed. Not a trace remained of any cavity in the cancellated tissue, for not a trace was left of the cancellated bone. The whole surface was absolutely free from sign of ulcerating, caseating, tubercular disease. The clot extended solidly from side to side, and as far as my finger could go upward. How much farther I do not know. The cartilages were nearly free from disease. A hole two c.m. in diameter communicated with the cavern in the femur through which the clot presented, but there was no blood in the joint cavity. Tibia and patella were entirely free from disease.

I have a fondness for firm aseptic blood-clots in surgery, and I did not remove this one, but left it mainly undisturbed and completed the operation in the ordinary way. The result has been about as usual. The patient will have a fairly good limb, the clot will be replaced by osseous and fibrous tissue, but it is altogether probable that non-interference would have been as short a road to recovery and with the limb perfect, or nearly so.

What occurred in the progress of this tuberculin treatment we may fairly assume to have been as follows, provided we admit that the typical reactions which occurred proved the case to be tubercular:

The tubercular disease brought about the formation of softened spots or cavities in the lower end of the femur. The disease had progressed so far that a rupture of one or more cavities was about to take place into the joint, but no considerable extension had yet occurred as the cartilages were healthy. The action of the lymph was to destroy and eliminate the colonies of growth in the bone, with typical reaction. The rarefying osteitis, which accompanies both the tubercular and the lymph process, was such as to remove *in toto* the whole interior of the bone, and nature's method of restoring the tissue lost was by throwing into the cavity enough healthy blood to make a smooth, hard coagulum, which the best surgeons now recognize as the ideal means of dealing with bony cavities. New bone formation takes place under most favorable influences when perfectly aseptic coagula can gradually be displaced by the growing cells.

It is well known that carious bone cavities require careful scraping out of all tubercular and other septic deposits, and that

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this process to be successful must be very thorough, especially where it is attempted to use the primary blood-clot closure, but what surgeon ever equalled in thoroughness the erasure of softened tissue which we find in this case, or could do so. Not only is all carious bone taken away, but all beyond it which was invisibly infected, and might later have become tubercular, is destroyed and removed utterly from the field, and replaced by a pure sterile coagulum. It is evident that a few minute doses of this potent agent have done what no surgeon could have done equally well, and the marvel of it grows the more we consider it in its various bearings.

The point I think most important in this case, is the fact that the cavern left after the destruction and disappearance of the diseased area was closed by a blood clot. It is desirable to know whether this occurs regularly or exceptionally, and also whether it may occur in other than bony cavities.

If the hemorrhagic tendency is a constant phenomenon, it may account for pulmonary hemorrhages which would then have to be classed as conservative rather than destructive symptoms, as many other signs of disease have been found conservative when our knowledge of pathology increased. It may even be shown that pulmonary caverns are sometimes obliterated and cured by firm aseptic clots, and that only those bleed which are ruptured or become infected. This in turn might account for the numerous cases of obliterated cavities we find in autopsies of persons dying from other causes.

I am a firm believer in the efficacy of tuberculin, because I think it is only applying nature's cure, which she sometimes misapplies; in other words, that patients who have tuberculosis tend to generate tuberculin and poison themselves with it, thus at the same time ridding themselves of the disease and securing immunity from it for at least a time.

65 Randolph Street.

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A CONTRIBUTION TO THE TREATMENT OF GLEET.

By ALBERT H. BURR, M.D.

Read before the Chicago Medical Society July 20th, 1891.

The scope of this paper is to present a method of medicating the pathological urethra in conjunction with the usual well-known instrumental management of gleet and its sequences. For the purpose of the present discussion the term gleet is used in its broadest sense as signifying any urethral discharge of a chronic nature following an acute or subacute urethritis. So constantly does it follow in the wake of a specific disease that gleet may be termed the ghost of gonorrhœal infection that will not down but is ever present to haunt the victim of indiscretion and render him morbidly sensitive and miserable to a degree unwarranted by the gravity of the affection. For this reason every physician who will honestly address himself to the amelioration of this large class of sufferers, and the rationale of whose treatment appeals to the reason of his patient, will find a wide field and an abundant harvest. Gleet is very prevalent, for its forerunner, gonorrhœa, unlike most inflammatory diseases, does not tend to resolution readily, but lingers as a chronic affection of the crypts and follicles of the urethra, and even of Cowper's glands and of the prostate. It most commonly consists in changes in the urethral mucous membrane, which in certain localities has been denuded of its epithelium by the inflammation induced by the gonococcus or its ptomaines leaving an injected, granulated pus-forming surface, which in turn produces cicatricial tissue with its resulting contraction recognized as stricture. Behind these bands of stricture ulcerated patches form as a result of the narrowed lumen, produced in part, perhaps, by the impinging stream of urine against a partial obstruction, but in greater part to retention of secretions and residual urine which undergo decomposition. From these patches emanates the mucopurulent, gleety discharge. This retention of mucopus is quite marked in well-formed stricture, held in a pocket, as it were, behind a ridge of thickened membranes. This accumulation can be demonstrated by instructing the patient to void his urine to clear the smooth

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and unaffected portions of the urethra of all secretions, and immediately pass a bulb or sound of sufficient calibre to puf the strictured part upon the stretch, when a few drops of gleety discharge will follow the withdrawn instrument. This I often observe in patients who note only a drop or two of discharge in the mornings.

It was for the purpose of more thorough medication, and retention of remedies upon these diseased surfaces, that I devised the instrument which I present to you, which is manufactured by Messrs. Sharp & Smith.

It consists of an ordinary hard-rubber syringe barrel of one ounce capacity, into which is screwed a tube of the same material, of the calibre of a No. 10 catheter, curved near the distal end to any degree desired, from that of a female to a male catheter, and terminating in a well-rounded bulb to prevent injury to the parts in introduction.

More thorough medication is obtained by this ointment syringe, through the ability to *mass* a *stiffened, viscid* ointment containing any desired medicament, at the seat of the disease, which has been previously located by the bulb or sound. By means of the curve in the discharge tube the farthest stricture may be passed, or the prostate, and even the bladder itself, may be medicated if desired.

The retention of the ointment over the granulated surfaces is accomplished in part by the stricture itself, in part by the viscid excipient carrying the remedies desired, in part by the consistency of the ointment, which should be as stiff as can be conveniently forced through the tube of the syringe, and forming, as it were, a suppository or plug, and finally by tamponing the meatus. Medication of the urethra by means of ointments, in the form of bougies, or spread upon grooved or cupped sounds, or moulded on flexible spiral wire cores to be left in situ, has been long in vogue, but for obvious reasons, such as too short contact, irritation or inconvenience to patient, or even positive injury, all are more or less defective. For the purpose intended it seems to me the Ointment syringe does away with every possible objection. For the past eight years I have made frequent use of it in connection with sounds or electrodes, and have found it a valuable addition to the treatment of gleet.

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My practice is to have my patient pass his urine after having introduced sounds or electrodes, and pass the ointment with any desired medication, massing where most required and tamponing immediately on withdrawing the syringe tube, with the instruction to refrain from urinating as long as possible. Many patients, when treatment is made in the evening, retain the medication till morning, and if the ointment is somewhat adhesive and is massed behind the band of stricture, it is not all carried away by the first urination. Many patients tell me they observe small portions of the ointment at successive urinations during the day following. Such prolonged contact of astringent, stimulating, alterative or antiseptic remedies certainly hasten the cure of gleet in my hands.

This paper would not be complete without a few words in reference to the ointments which may be used and remedies already found to be of value. Long since Unna and Spurling employed nitrate of silver incorporated in an ointment spread upon grooved or cupped sounds, passed to the granulated or ulcerated patches and held in contact for a few minutes. The formula of Unna is given on the box of ointment which I exhibit to-night. The appropriate condition for its use will suggest itself to you all. Used in the Ointment syringe it has the merit of prolonged contact over the seat of the disease. Spurling's formula differs from Unna's only in the strength of the nitrate of silver, which is five times as great, and in the substitution of lanoline for the cocoa butter. As alteratives, iodoform, aristol, calomel may be suggested; for astringents, bismuth, hydrastin muriate, and the like; antiseptics, some of the volatile oils and pyoktanin, with which I am conducting experiments not only in gleet, but also in acute gonorrhœa, the results of which I hope to present to you in a future paper. The best excipients for these remedies I have found, for the purpose of the syringe, to be an ointment composed of cocoa butter as a base, softened to the proper consistency by lanoline, and rendered viscid by bals. peru, or fir, in small amounts.

I have not prepared a table of cases, but have treated certainly over two hundred patients in this way, and am firmly convinced of its efficacy. My patients are satisfied with it, at least, and I count them good judges of its merits.

2300 Indiana Avenue.

[*For Discussion see Society Proceedings.*]

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REPORT OF COMPOUND SKULL FRACTURES.*

By A. R. EDWARDS, M.D.

Read before the Cook County Hospital Clinical Society, July 2d, 1891.

Case 1. *Fracture of base and vertex.*

May 3d, 1891. Tim Z. Entered as unknown man. Could not answer questions. Rolled his head constantly from side to side; moved arms and legs freely and frequently. Friends coming to visit patient later, said that he was struck by a base-ball bat. Examination showed fairly profuse hemorrhage from both nostrils. Considerable hemorrhage from right ear, but none from the left. Left pupil somewhat but not greatly dilated, although much more than the right. There was sudden, great and constantly increasing ecchymosis over the right eye. Over the upper and anterior part of the left parietal region was found a gash about two inches long with a smaller cut external to it. Pulse slow, full and at times irregular. Respirations slow.

Operation: Ether narcosis. Rigid antisepsis. Enlarged the greater wound to five or six inches and found a very dirty, long, more or less impacted, somewhat depressed fracture corresponding in direction to the incision. Anteriorly the fracture extended towards the ecchymosed right eye, forwards and downwards, and gaped to the extent of one quarter of an inch. The fracture extended posteriorly in a straight line. Chiselled away the impacted bone, but this causing symptoms of compression, the trephine was used upon that side of the fracture nearest the median line. There was no pulsation in the brain, which was exposed through the lacerated membranes. There was much profuse, though temporary, hemorrhage. The membranes were divided upon the director and bits of crushed cerebral matter removed. The brain was irrigated with boric acid solution. Capillary drainage from beneath the dura. Sutures with iodoform gauze drainage. Dressings.

May 10th, 1891. Marked exophthalmos in right eye; right facial paralysis; paresis of right arm; right leg apparently intact. Patient has been semi-comatose for seven days.

*Observed in the regular surgical service of the Cook County Hospital from April 1st to July 1st, 1891.

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June 18th. Over area of incision and fracture on the vertex is a line of gradually healing granulation tissue, which has been repeatedly cauterized with nitrate of silver. Somewhat to the left side of the forehead is a granulating area as large as a nickel and admits the passage of cerebro-spinal fluid. Placing the finger over the right eye a slight depression is felt, and is traceable as a small gutter to the opening indicated. Stroking the furrow from right to left the fluid escapes.

July 1st. The patient retains the facial paralysis and the granulations are slowly filling up the gap left after operation. Friends state that the patient's intellect is impaired.

Case 2. *Fracture of base and vertex.*

April 8th, 1891. Jno. S. was struck on head with a wagon wheel. Besides other injuries, including fracture of base in the left temporal region, is a lacerated wound of the scalp and digital examination reveals over the temporal bone and a small portion of the parietal, a depressed fracture. Thorough antisepsis. Enlarged incision, denuded pericranium, and chiselled an opening for the elevation of the fragments. These were removed with forceps and compression symptoms were relieved. The patient was hurried to bed on account of his bad condition and he lived but six hours. A post-mortem showed that fracture extended from the temporal bone, through the great wing of the sphenoid to a point beyond the foramen magnum on the opposite side of the head.

Case 3. *Depressed fracture of vertex.*

May 21st, 1891. Jos. A. Railroad injury. Patient conscious and struggled violently. No paralysis; left eye somewhat contused. Pupils normal. Over the area of junction of the saggital and lambdoid sutures was a clean-cut scalp wound, about four inches long, extending from a point to the left and anterior to the site mentioned, to the right and posterior of that landmark. Thorough disinfection. A long fracture was discovered which was depressed towards the right and backwards. After enlarging the incision, two depressions were found, one much and a second but little depressed. A small splinter from the outer table was removed. The margin of the depression was chiselled away to give leverage and space to remove the deeply depressed bone. Several fragments were placed in salt solution at blood heat. The

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rongeur forceps were employed as there was no good fulcrum for the elevator. The bone removed, the membranes were seen to be severed and a little lacerated brain tissue extruded. The latter was returned by sterilized sponges. Much time was required to check the dural hemorrhage but it was finally controlled by inclusive sutures and compression. The cerebral tissue was irrigated with boric acid solution. The dura was sutured with number four silk and sub-dural drainage was instituted with heavy silk. Pericranium, fascia and skin were sutured, after half a dozen small chips of bone were replaced. Iodoform gauze drainage. The temperature remained at 99.6° or lower for a week, when, May 27th, the temperature rose suddenly to 103.4° axilla. In five days later, June 1st, the patient died with a temperature of 106.2° axilla, the temperature never falling below 103.3° axilla. During this hyperpyrexia, tossing and restlessness, delirium, crying out, a flushed face, involuntary micturition and defecation, convulsions and finally coma, constituted the clinical picture. No post-mortem could be obtained.

The following point is worthy of notice. Silk was used for suturing the dura; catgut might have been better, even if infected. The external wound remained aseptic. When the brain alone is infected the temperature is normal or subnormal. The high temperature in this case indicated suppurative lepto-meningitis. The symptoms of compression exhibited towards the close were due to the exudate which, in meningitis, causes general, not local, compression.

Case 4. *Depressed fracture of vertex.*

April —, 1891. Hans F. Patient entered semi-comatose. Pulse 80° and regular. Respiration regular; no paralysis. Slight ecchymosis of left eye which increased perceptibly. Large jagged wound in scalp over left parietal bone somewhat forward of the protuberance extending to cranium. Depressed fracture discovered. Under chloroform, which seems more favorable as regards hemorrhage than is ether, enlarged the wound and found the depressed fragment to cover an area of three and a half by two inches. Fragment was elevated and kept in salt solution. Examination showed no puncture in the dura mater which pulsated freely. Irrigated, replaced the fragments, sutured the wound and employed iodoform drainage. Drain was removed in two days and the wound sewed up tight.

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May 8th, 1891. Two weeks after operation, the temperature, which until then had remained normal, rose to 103° and 104° and exhibited a typhoid curve. Head wound examined; opened wound; no signs of infection. Removed one of the three pieces of bone which had been replaced at the operation. This fragment was firmly adherent laterally and to the dura and appeared normal. With exploring needle, searched the brain for superficial abscess; none was found and the wound was packed with iodoform gauze and patient returned to bed.

May 9th, 1891. Patient examined by Dr. Fenger. At present has a diarrhea, slight tympanites and suspicious spots on abdomen like roseolæ; nausea and frontal headache. Temperature 103°. Pulse 80–90. After a complete physical examination and after dressing head, Dr. Fenger said there existed no infection and diagnosed typhoid fever. A few days later the scalp was sutured and that portion of the wound over the exposed dura packed with iodoform gauze. Typhoid orders were given and a clear case of typhoid fever followed. Patient had several convulsions of an epileptiform type according to the account of the nurse. The head was thrown backwards but there were no focal symptoms. A second exploration with a needle gave negative results. In differentiation of cerebral abscess from typhoid, we note the following: The latent period of development usual in abscess is commonly longer than two weeks, the time of appearance of the first symptoms in this case. Localized headache, as well as nausea and vomiting are not peculiar to cerebral suppuration. In abscess the temperature rises slowly if at all. The rise in this case was comparatively sudden. The pulse is slower than in typhoid. Local nerve symptoms depend upon the site. Hemiplegia, epileptiform convulsions, spasms, spastic rigidity, etc., may follow focal lesions. In this case, after several days, a history of epilepsy was obtained. Suppurative leptomeningitis was excluded by absence of any symptoms such as were seen in the last case noted. These explorations of the brain demonstrated the harmlessness of puncture of the brain under proper precautions, *i. e.* if the needle be fine and thorough asepsis be regarded.

On patient's discharge, July 2d, 1891, only a slight depression remained over the side where the one fragment had been removed.

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Case 5. *Depressed fracture of frontal bone.*

Joseph M. Fell three stories. On account of excessive shock, operation upon a compound depressed fracture of the frontal bone was postponed for about eighteen hours. The left eye was much swollen and ecchymosed. There were also injuries to scapula, ribs, arm and lung.

Operation: Elevated a depressed fragment in the left superciliary region, which was deeper by one-third of an inch than the unfractured margin of bone. It appeared that the inner table was intact. Wound closed. Died four days later with rapidly failing pulse. Post-mortem showed besides fracture of seven ribs, hæmatothorax, pneumothorax, pneumonia of left lower lobe, a fracture which separated the vertical from the horizontal plate of the frontal bone and extended into the middle fossa on right side. No meningitis. There was absolutely no ante-mortem evidence of the wide extent of the fracture.

Case 6. *Compound fracture of superior maxilla, malar, and frontal bones of right side.*

H. B. Wound opening up the orbit freely and communicating with either the antrum or frontal sinuses, as shown by the escape of bubbles of air through the blood from the bottom of the wound. A pyramidal piece of bone constituting the outer and inferior wall of orbit was removed and the ragged edge of the malar bone trimmed with bone forceps. Deeply packed with iodoform gauze. No temperature. Rapid recovery.

Case 7. *Depressed fracture of vertex.*

Griffith D. Fell from a third story and struck on his head. Was brought to hospital in shock and semi-comatose. In the bottom of a large scalp wound over the forehead, extending half way across the skull, was a depressed fracture through which much blood oozed. One fragment, which contained the groove for the falciform process of the dura, was removed and the dura was found so lacerated below that the edges could not be brought together. The bone fragments were returned from the warm salt solution and a silk drain inserted which reached to the dura. Iodoform gauze drain in each angle of wound. Patient died four days later in delirium, with high temperature on the last day. No post-mortem obtained.

Ten fractures of the base of the skull have entered during

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this service. Of these, seven died and three recovered. One recovery is the case first cited. The second and third are cases eight and nine.

Case 8. *Fracture of base.*

Chris. R. Entered hospital semi-unconscious. Pupils, left larger than the right. Hemorrhage from middle ear (right side). Cheyne-Stoke's respiration. Pulse slow. Epileptiform convulsions. Scalp wound over occiput. Two days later, patient still appeared somewhat irrational. Slight paresis of right side of face. Tongue deviates to right side. Left pupil still dilated. Discharged in four weeks recovered.

Case 9. *Fracture of base.*

Jno. S. Patient was caught between a wagon and a moving wheel and his head compressed.

Examination: Hemorrhage from both auditory meatuses, which was proven to originate in the middle ear, on cleansing and inspecting the cotton plugs the next day, when they were found lightly stained with blood and cerebro-spinal fluid. Hemorrhage from both nostrils and from the mouth. Face much contused. There were well-marked sub-conjunctival ecchymoses of both eyes, which visibly increased while the patient lay upon the table. Right pupil was contracted, left pupil was dilated. The treatment of these cases was: Thorough disinfection of all avenues of infection by antiseptic solutions and occlusive dressings, tampons, drainage or absorbents, and fixation by bandages or starch dressings.

Case 10. *Compound depressed gunshot fracture of skull.*

June 4th, 1891. Geo. W. Shot at short range from the side. Patient sent in with diagnosis of skull fracture from South Side Dispensary. Patient walked thence to Cook County Hospital.

Examination: No hemorrhage from wound until removal of packing, when great oozing ensued. There was a grooved, ragged wound about two inches long which corresponded approximately to right superior curved line of the occipital bone. Thorough primary disinfection. The finger inserted into the wound detected a fissure and a sharp edge beside it.

Operation: Enlarged incision. Found about half a bullet imbedded in the outer table, which was considerably depressed over an area about as large as a nickel. Chiselled away the bone

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around the fragment of lead and a depression about as large as that in the outer table was found. The compression caused thereby was relieved by the elevator and chisel. Blood clots from between the dura and the calvaria were washed away with boric acid solution. The membranes were intact. Iodoform gauze drainage. Sewed up with continuous and interrupted sutures. Slight suppuration. In the bottom of the granulating cavity faint pulsations are evident. July 3d, 1891, discharged healed.

COOK COUNTY HOSPITAL, CHICAGO.

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REPORT OF CASES.

(*a*) Empyema in a Child Four Years Old, (*b*) Pin in Larynx of Child Removed by Endo-laryngeal Method, (*c*) A Non-malignant Growth on Vocal Cord Successfully Removed, (*d*) Diphtheritic Croup at the Age of Sixty Years.

By F. E. WAXHAM, M.D.

Professor of Diseases of Children, Laryngology and Rhinology, College of Physicians and Surgeons of Chicago; Professor of Laryngology and Rhinology Post-Graduate Medical School of Chicago.

Read before the Chicago Medical Society, July 6th, 1891.

The first case, that of *empyema in a child*, is especially interesting on account of the many complications and the remarkable vitality of the patient. Among the most common causes of empyema in children are pleurisy, pneumonia and diphtheria. In this case all these causes combined to produce the disease, together with very unfavorable hygienic surroundings. On May 1st of last year I was called, through the courtesy of Dr. Meyeronitz, to perform intubation upon a boy between three and four years of age, and learned that he had been ill with pharyngeal diphtheria, for a number of days. The child was much prostrated; the disease had invaded the larynx, respiration was difficult indeed, and death seemed inevitable. The operation was performed, giving immediate relief to the urgent symptoms. After six days the boy was able to breathe without the tube and seemed in a fair way to recover.

Four weeks later I was again called, and found the patient with a dangerous attack of pleuro-pneumonia. The symptoms were severe and positive. The child had not completely recovered from the effects of the diphtheria when he came down with the pneumonia. Although the dangerous symptoms subsided in the course of ten days, yet some fever continued, the cough remained troublesome, together with some dyspnœa and dullness over a considerable portion of right lung.

Upon aspirating with a hypodermic needle pus was found in the pleural cavity.

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June 29th, with the assistance of Dr. Meyeronitz, a free incision was made in the axillary line in the sixth interspace, and a large amount of pus evacuated. A double drainage tube was inserted and the pleural cavity thoroughly washed with a warm saturated solution of boracic acid and antiseptic dressings applied. The amount of pus gradually diminished, but did not entirely cease, and upon careful search for the cause of the persistent discharge it was found in the presence of a necrosed rib. Although the child was greatly emaciated, there was still a fair amount of vitality, and it was determined to excise the rib.

August 7th, again assisted by Dr. Meyeronitz, an anæsthetic was administered and several inches of necrosed rib removed, and antiseptic dressings applied. The child now made a speedy recovery, and since has remained perfectly well.

Case 2. *Pin in the Larynx.*

This case is interesting on account of the peculiar position of the pin. The case I believe to be unique, having never heard or read of a similar case.

January 1st, Dr. M. W. Bacon, of Englewood, referred this patient to me, and the following history was elicited: Twenty-four hours previously, while holding a pin in the mouth, it slipped down his throat, and after coughing violently for a moment a sharp pain was felt, which was greatly intensified upon swallowing. The pin had fallen into the larynx head first, and when the spasmodic cough occurred the point, which was very sharp, was driven upward into the epiglottis. Dr. Bacon, being consulted, wisely advised the swallowing of a crust of bread; as this was done the head of the pin, striking against the walls of the larynx, the point was more deeply forced into the epiglottis, as the latter was pressed down by the bolus during the act of swallowing, and the pin was thus insured against accidentally dropping into the trachea.

The symptoms indicating the presence of the pin in the larynx were a more or less frequent cough, constant pricking pain in the throat, and difficult and very painful deglutition. Although but ten years old, the boy was intelligent and tractable, and permitted a careful laryngoscopic examination. The pin was plainly seen, with the head directed downward into the glottis, and the point firmly implanted in the tip of the epiglottis. After

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anæsthetizing the throat with a ten per cent. solution of cocaine, a careful attempt was made at removal. A modified Cusco's forceps was employed and, guided by the mirror, introduced, and the pin firmly grasped and removed at the expense of some slight injury to the epiglottis as the point of the pin tore through it. For two or three days there remained some pain, especially upon swallowing, but this soon subsided.

Case 3. *Non-malignant Growth on Vocal Cord.*

D. H., a vocal music teacher, consulted me January 22d, on account of impairment of the voice. There was not complete aphonia, and yet the voice had gradually become hoarse and husky, and now completely interfered with his occupation. Upon careful laryngoscopic examination a small reddish growth, half the size of a buckshot, and with a broad base, was seen upon the right vocal cord. This growth, though not large, prevented the close approximation and normal vibration of the vocal cords. Our authorities do not generally recommend the removal of non-malignant growths unless their position or size is such as to endanger life by obstruction to respiration. Indeed, some state positively that the only indication for their removal is rapid growth and dyspnœa, and strongly advise guarded instruments, instead of cutting forceps, when removed, on account of the great danger of injury to the vocal cords, and subsequent inflammation and swelling of the mucous membrane of the larynx. In this case, on account of the great hardship resulting from the loss of occupation, it seemed that we were justified in a careful attempt at removal. For reason of the small size of the growth and broad attachment, the cutting forceps was the only instrument suitable for the purpose. The throat and larnyx were thoroughly anæsthetized with cocaine, the instrument warmed and passed down into the larynx, guided by the mirror. He was now directed to take a deep breath and produce the prolonged sound of A, in a high pitch, and as the vocal cords approximated, the growth was seized with forceps and removed. The growth, upon removal, was found to be a small myxo-fibroma. For a few days following the operation, there was slight congestion of the right vocal band, but this soon passed away after a few applications of chloride of zinc (gr. iii to ʒ i). Three months later, upon examination of the larynx, both vocal cords were perfectly

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natural. There was not the slightest evidence of return of the growth, the patient had resumed his occupation, and the voice was clear and perfect.

Case 4. *Diphtheritic Croup at the Age of Sixty years.*

On April 15th, I was called, through the courtesy of Dr. A. E. Palmer, of Morris, Illinois, to see Mrs. M. B., a lady of great culture and refinement. On arriving at 11 A. M. the patient was found breathing with great difficulty; the pulse was small and very weak, and the extremities were becoming cold. Intelligence, however, was unimpaired, and she complained of a great sense of suffocation. Dr. Palmer has very kindly given me the following history:

"Mrs. B., aged sixty, never had any serious illness. Had chronic pharyngitis, and at about the age of forty had several attacks of spasmodic croup. Two weeks before last illness visited Braidwood, and as there had not been a case of diphtheria in Morris for many months, it was thought that she may have contracted the disease there. Friday, April 10th, 1891, was slightly indisposed, also April 11th. Sunday, April 12th, was very much better and unusually vivacious. Monday morning at 2 A. M. was called on account of the difficulty of breathing and found false membrane, covering a large portion of the fauces. Tuesday the membrane was less, but the breathing more difficult." Wednesday, April 15th, Dr. Palmer summoned me to his assistance to perform intubation, and the symptoms had become so urgent that there was but little time for delay. An adult tube was armed with thread and attached to the introducer. The patient was placed in a sitting position in bed and was well supported. The gag was placed between the teeth and the tube quickly introduced into the larynx. As this was done respiration was at once arrested, membrane having been pushed down in front of the tube. After waiting a moment the tube was quickly withdrawn, and the expulsive cough which followed expelled this large membrane exudate, which we observe is a perfect cast of the whole trachea. Respiration now became perfectly normal, the pulse improved, the color returned, and the patient expressed herself as comfortable. As there was not the slightest impediment to respiration, it was decided not to re-introduce the tube.

In regard to the subsequent history, Dr. Palmer writes as

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follows: "There was entire relief until Thursday noon, when symptoms of pulmonary obstruction supervened and steadily increased until death occurred very easily and quietly at 4 P. M., Friday, April 17th, 1891. There has not been a case of diphtheria in Morris since the death of Mrs. B."

A New Instrument.

In this connection I would like to present an instrument devised for the purpose of resuscitating asphyxiated infants. I was forcibly reminded of the necessity of some such instrument as this not long since, when, in company with Dr. E. E. Babcock, of this city, I was called to a case of an infant that was born asphyxiated. It was a breech presentation, and after birth, although the heart beat quite strongly, yet there was not the slightest attempt at respiration. Every known method of artificial respiration was employed, and yet it was impossible to resuscitate the infant. Not having a catheter at hand one was quickly sent for, but when it arrived the pulsations of the heart had ceased. However, tracheotomy was performed and the catheter introduced into the trachea, the lungs inflated and respiration carried on in this manner for some time, but resuscitation was impossible.

The difficulty with the catheter is that it is difficult to introduce into the larynx of a child, and if tracheotomy is performed you have the wound to attend to, which is a serious matter for the young infant, and the eyelet of the catheter being on the side as much air comes up as goes down. This case clearly showed me the necessity for an instrument that we could pass down the trachea by way of the mouth, and inflate the lungs without the necessity of tracheotomy. The head of this instrument which I present should be round and small to be passed down the trachea through the larynx, then the tube being hollow the lungs can be inflated by blowing, and by pressing on the chest the air can be expelled, then again inflate, and so on.

240 Wabash Avenue.

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Editorial.

RESTRICTION OF IMMIGRATION.

Some laudable efforts are being put forth by the government in the direction of controlling, and, if possible, of stopping the influx of undesirable foreign social elements. Recently the question has called forth several able editorials in the medical press, which has, however, only taken up the question of physical ailments, leaving the equally or more important consideration of moral and mental disease untouched. It is the well known and unblushingly acknowledged practice of European physicians and others in charge of institutions for the insane and defective classes to advise their recovered and partially recovered charges to emigrate to America, thus clearing their records in case of relapse, and freeing themselves and their communities from a burden which is thrust upon this country. Malefactors, suspects, vagrants and the whole defective class are not only advised to come to America, but are assisted to do so out of the public funds by the police authorities and other officials. Witness the following from the *British Medical Journal* of July 11th: "About fifty-five pauper children have been assisted to emigrate to America by the Leeds Board of Guardians, the first batch going in 1888. * * * A gratifying point is that it seems to be a more economical way of dealing with destitute children. Mr. King, the clerk of the board, estimates that had they been kept at home, the cost would have been over one thousand three hundred pounds, whilst the cost of sending them has only been about seven hundred pounds." These practices are, however, so well known, that one is amazed at the apathy with which our people endure the imposition.

The present quarantine measures and inspection of immigrants at our various ports of entry are absolutely defective, and even did they prevent the landing of the diseased, there is no possible protection along our Northern and Southern boundary, as is daily proven by the Chinese coming in from British soil to the North.

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Nor can the tide be stemmed by placing restrictions and penalties upon the steamship companies, requiring them to return at their own expense those falling under the prohibitory enactments of our too generous laws. The stream must be stopped at the source. This is the direction taken by Dr. John B. Hamilton in his recent attempt to have medical examiners stationed at foreign ports. The whole matter can be readily controlled, however, as has been repeatedly indicated to this government by its duly appointed foreign representatives and notably by the late Edmund Jussen, for some years Consul-General at Vienna.

As a matter of fact, every individual in the countries which furnish the very large majority of immigrants is the object of police supervision from the cradle to the grave, and can be traced by their records through every year and month of his life. If he has been a public charge, it is shown. If he has fallen under the penalty of the laws, it is clearly recorded. If, therefore, when he intends to emigrate to this country it were exacted that he present to the American consul at the port of sailing for his endorsement a certified record of his social standing, and at the same time be submitted to a medical examination by the officers there stationed, it is evident that this matter could be at once and completely controlled, the steamship companies not being allowed under severe penalty to land on this coast any foreigners unprovided with the proper credentials.

Those of a desirable character, of industrious and temperate habits, who give promise of making law-abiding and self-supporting citizens, are to be earnestly welcomed, but of the dregs we have had a plenty.

The Rev. Mr. Beecher once substantially likened this country to a great stomach which could take in all sorts and conditions of food and from it elaborate good citizens. If the comparison be a fair one, it is now time to recognize that there is such a thing as indigestion on hand, and that a restricted and suitable diet is urgently indicated, else the patient may perish.

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Society Proceedings.

THE CHICAGO MEDICAL SOCIETY.

Regular Meeting, July 6th, 1891.

President DANIEL R. BROWER in the chair.

The meeting was called to order by President BROWER.

The minutes of the preceding meeting were read and approved.

The Committee on Membership reported favorably on the applications of Drs. R. E. Miller, 3100 State street, and L. L. Skelton, 70 State street, and on motion the Secretary cast the ballot of the Society for their election.

The following applications were read and referred to the Committee on Membership, viz.: Drs. F. W. E. Henkel, S. C. Plummer, F. D. Owsley, F. L. B. Jenney, L. W. Burson, Willoughby Walling, A. E. Coy, A. D. Bevan, A. R. Edwards, C. P. Stringfield and G. W. Reynolds.

Dr. S. J. JONES presented a petition addressed to the Governor of this State requesting the reappointment of Dr. Rauch to the State Board of Health and solicited the signatures of the members of the Society thereto. Dr. Jones also read a circular letter addressed to the various medical organizations throughout the State, requesting their co-operation in the endeavor to secure the reappointment of Dr. Rauch. On motion, the plans recommended by Dr. Jones were endorsed.

Dr. E. W. ANDREWS read a paper entitled "A Case Illustrating the Benign Power of Tuberculin" and exhibited a pathological specimen. (See page 531.)

Dr. A. J. OCHSNER reported a case of removal of arm, together with clavicle and scapula. (See page 502.)

Dr. F. E. WAXHAM reported cases as follows: Empyema in child four years old, treated by excision of rib; pin in larnyx of child removed by endolaryngeal method; non-malignant growth successfully removed from vocal cord; diphtheritic croup occurring at the age of sixty years, and exhibited a new instrument. (See page 546.)

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Dr. Casey A. Wood, in exhibiting

Some New Disks for Ophthalmic Medication,

said:

Although solid remedies are in ophthalmic practice commonly used in solution or as finely triturated powders mixed with fatty excipients in the form of ointments, there are many cases where they could with better effect be employed alone or in mixtures with other solids. When a solution of a drug—atropine sulphate, for example—is instilled drop by drop into the conjunctival sac, which, by the way, holds not more than a single drop, at least ninety per cent. of it runs through the nasal duct into the nose and nasopharynx, or, mingling with a superabundance of tears, flows over the margin of the lower lid upon the face. That is to say, to obtain the effect upon the eye of the $\frac{1}{100}$ gr. of atropia, $\frac{1}{10}$ of a gr. in watery solution must be introduced into the conjunctival sac. Aside from this waste of material—a matter for consideration when using such alkaloids as homatropine, that costs seventy-five cents a grain—the absorption of the remedy by the naso-pharyngeal mucous membrane may not be desirable, as in the case of atropine, cocaine, hyoscin, veratria and other powerful poisons. To provide against this and for the purpose of securing a full effect of the agent employed, discs of various kinds, made with gelatine, have long been in use, but for several reasons have not been generally employed—at least not in America. Their great cost and the fact that they are mostly of foreign importation and not readily accessible, have had something to do with this. It occurred to me some time ago that ophthalmic discs could be more cheaply and more efficiently manufactured by our own chemists, and for some time past I have been experimenting with the idea that they might possibly prove of service to those who found it desirable to use this kind of medication. I chose the form that Messrs. Wyeth & Brother make use of in their hypodermic tablets, and after trying a variety of excipients—among them dextrin, linseed jelly, gum acacia, Irish moss, quince-seed jelly, marshmallow jelly, gum tragacanth and the various kinds of gelatine—all these alone and mixed with boric acid—I concluded that the latter combination best suited the general purpose I had in view. To this, however, I make one exception, and that is the use of cocaine and mixtures

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of it. I found that in consequence of the desiccating effects of that agent upon the corneal epithelium, it is not safe to use it in the disc form unless it were combined with gelatine alone or in a combination of which gelatine formed the greatest proportion, because, when used with other excipients, it is very liable to cause an annoying abrasion of the cornea. I present some of these discs to-night and claim for them the following advantages in cases suitable for their administration. The Wyeths have prepared for me a large variety of both kinds from formulæ I submitted to them:

1. Slow, regular and complete solution in the conjunctival sac. 2. The exhibition of a definite dose, the full effect of which may be looked for. 3. Unlike solutions and ointments they do not lose their strength or decompose in a few days or weeks, but may be kept many months. 4. The cost of the gelatinous form is, I understand, less than the imported French and English makes, and I believe they are in many respects superior to the latter. 5. In my experiments with the compressed discs, I have found them, when employed in suitable cases, to be non-irritant and readily soluble. 6. The effect of both forms will be found to be many times greater than the corresponding solutions. I think I am within bounds in estimating the efficacy of a disc containing $\frac{1}{1000}$ gr. of atropine to be equal to one drop of a one per cent. aqueous solution of that drug, although nominally the latter is ten times as strong. 7. The portability of these discs has something to recommend them as like the armament of hypodermic tablets, with which all of us are now-a-days equipped. The surgeon may, if need be, carry about an assortment of these discs for the treatment of ocular affections. 8. Finally, their application is simple enough. Having dampened a small camel-hair brush, touch with it a disc previously placed on a piece of clean, dry paper, when the disc will readily stick to the brush. The patient is now told to look up, the lower lid is drawn down and the disc placed against the scleral conjunctiva towards the outer canthus. The eye is now closed until the disc becomes softened and partially absorbed.

Dr. Samuel Jones: There is an evident convenience of application in these tablets, and an advantage in the smallness of the discs. The ones we have been in the habit of using are larger

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in size, and though they dissolve quickly, if there were any movement of the eyeballs there would be more or less friction and some annoyance, but the lids are closed, and there is less trouble than there would be from the incomplete solution of many of the medicines we use. There are many advantages in these discs, and I am glad we have such a variety of them, as heretofore we have been limited to the discs of atropine and calabar bean.

Dr. C. D. WESCOTT: I am very glad indeed for the assistance the doctor has given us in this direction. The fact mentioned in the beginning of his paper that it is difficult to get the full benefit of any agent applied to the eye in solution, is familiar to us all. The objection to using discs heretofore has been the difficulty and expense of getting them, and sometimes they have proved to be quite irritating. The discs Dr. Wood exhibits seem to be elegant and convenient in form, and I shall be glad to use them.

The application for membership of D. W. J. Casely was read and referred to the proper committee.

Adjourned.

J. C. HOAG, *Secretary.*

Regular Meeting, July 20th, 1891.

The meeting was called to order by President BROWER.

The minutes of the preceding meeting were read and approved.

The applications of Drs. W. S. Christopher, J. C. Culbertson, H. N. Hall and Jno. A. Brill were read and referred to the Committee on Membership.

Dr. A. I. BOUFFLEUR read the report of a case of fracture and dislocation of one of the dorsal vertebræ, and exhibited the patient. (See page 524.)

In its discussion

Dr. J. B. HAMILTON said: The weight of surgical authority, as set forth in the text-books, is distinctly against operative procedure on the arches and spinous processes, but such cases as this here presented, go farther than any number of written opinions in the text-books, because we have ocular demonstration of the success of surgical interference But if we analyze the recorded cases that have occurred in the past, we notice that in fractures of the upper portion of the vertebral column, surgical

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interference has not been successful. Of course operative procedures here are based on the same principle as trephining of the skull, but the local conditions are markedly different. There is no difference of opinion among surgical authorities as to the propriety of removing spiculæ of bone in open wounds, but in the case of a simple fracture or dislocation, when we operate we change that into an open fracture, or open dislocation, and we add then the dangers of septicemia, in addition to the one which was before present. Moreover, in the majority of cases there will be found such lesions of the cord that relief from pressure where there is depressed bone, does not cure the patient, nor, in fact, relieve the condition of the spine. So that it becomes a question of the extent of injury to the spinal cord as to whether or not surgical interference shall be undertaken. Thorburn, the latest writer on the subject, has condemned the operation. A case such as has been reported to-night, where the dorsal vertebræ were involved, so remarkably successful as it seems to have been, is not only extremely creditable to the operator, but should go on record as an addition to surgery. I have seen some cases in which the spinous process was driven in on the spinal cord, and in those cases the operation did not relieve the patient in any perceptible degree. I think in the most of these cases the result depends upon the extent of the injury to the cord and the situation of the wound, whether in the cervical, dorsal or lumbar vertebræ. Operations on the cauda equina have always been fairly successful, but success decreases as we approach the cranium.

Dr. Archibald Church: I would like to ask Dr. Bouffleur as to the condition of the reflexes immediately following the injury and subsequently.

Dr. A. I. Bouffleur: Owing to the position in which the patient was at the time I examined him it was impossible to get a perfect reaction of the reflexes and to tell whether they were present in a normal, diminished or exaggerated degree. The man was in a semi-prone position and I did not think it advisable to turn him on his back; however, the cremasteric reflexes were present.

Dr. Archibald Church: I ask the question because formerly we were taught that the spinal cord might be completely severed

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and reflexes be present below that level, but recently Thorburn and others have claimed, and it seems to me proven, that when reflexes are present below the level of the lesion it demonstrates connection between the lower segment of the cord and cerebrum; therefore in these cases an examination of the reflexes is of the utmost importance.

Dr. G. Frank Lydston: Dr. Hamilton stated that we should be guided in deciding the question of operation by the condition of the cord. Cases have been seen where there was very little displacement and no crepitus and still the functions of the cord below the seat of injury have been almost completely abolished. I would like to ask Dr. Hamilton how he would decide the condition of the cord; if he would not think an exploratory operation was necessary in some cases to determine its condition?

Dr. J. B. Hamilton: If the loss of function below the injury came on gradually, then we would infer that it was from extravasated blood; if it came on immediately after the accident, that would be an almost certain indication of direct injury to the cord. As to operation in every case as an exploratory measure, I should not do this to the extent of removal of the vertebra or any portion of it, unless there were direct evidence of extravasation or spiculæ of bone. I can see no objection whatever to cutting through the muscular and ligamentous tissues to the spinous process and examining the laminæ, but to excise the spinous process and posterior arch I think would not be advisable in the majority of cases, and extremely bad surgery in many.

A paper by Dr. F. W. Schmidt, entitled "The Tinctionstherapie of Mosetig Moorhof in the Treatment of Inoperable Malignant Neoplasms" was read by the Secretary. (See page 506.)

Dr. A. J. Ochsner: We constantly come in contact with cases of carcinoma which from their advancement or location preclude the possibility of relief by operative measures.

Many of these tumors are ulcerated and in an advanced condition of decomposition, giving rise to a fœtor which makes the patient repulsive to himself and his friends.

In two such cases in which I have tried the use of one-third per cent. solution of methyl violet by hypodermic injection and superficial application the fœtor disappeared entirely.

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In these cases the cell development is most prolific, and if this remedy has the inhibitory influence which is claimed for it these cases will furnish a profitable field for its application. We have here, then, a remedy which is easily applied, gives rise to no pain, is harmless, and is able to dispose of a most disagreeable feature in these hopeless cases, and from this point of view it is certainly valuable.

Dr. J. B. HAMILTON: In regard to the injection of various substances into these inoperable neoplasms, especially epithelioma, the proceeding is based upon the direct action supposed to be taken against the cell. There is still a minority of the profession who believe that there is a microbic germ which forms these epitheliomata, and that germ is an anærobic one; if so, anything antagonistic to this germ would be discharged. I have in two or three instances made use of oxygen gas in epitheliomata that were not suitable for the knife, and it had precisely the same effect as is claimed for the methyl violet, that is, relief from fœtor and pain; but the direct injection of oxygen has an additional effect; these patients are extremely cachectic, they are anæmic, and the use of oxygen is a valuable therapeutic measure. It is easily obtained, and can be administered by direct hypodermic injection. I have devised a syringe for this purpose, having three points, each of different lengths, so as to penetrate the different layers of tissue, and I am certain that it has in several cases diminished the pain and the odor from the discharge; it is practically the same, I suppose, as using peroxide of hydrogen in suppurating wounds. But before we try methyl violet, I wish to suggest that we give oxygen gas a fair trial in each inoperable case.

The Committee on Membership reported favorably on the applications of Drs. G. W. Reynolds, 315 Webster avenue; C. P. Stringfield, 300 Thirty-first street; A. R. Edwards, Interne Cook County Hospital; A. D. Bevan, Auditorium Hotel; A. E. Coy, 439 Twenty-sixth street; S. W. Burson, 322 Racine avenue; F. L. B. Jenney, 609 Wells street; F. D. Owsley, 426 East Superior street; F. W. E. Henkel, 469 Ashland boulevard, and Willoughby Walling, 62 Oakwood avenue; and on motion the Secretary cast the ballot of the Society for their election.

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Dr. G. Frank Lydston read a paper entitled "Observations on Urethral Stricture." The points made by the essayist were essentially as follows: 1. That the liability to stricture is directly proportionate to the severity of urethritis. This is contrary to the accepted doctrines. 2. That the determining factor in the localization of stricture is friction. 3. That said friction is due to normal contraction or points of relative inelasticity in various parts of the canal. The pendulous urethra balloons unequally under the hydrostatic pressure of the urine; friction occurs at all narrow points. Incidentally there is an erosion of epithelium at the points of friction. As a result of the irritation, lymph is thrown up as an attempt on the part of nature to put the part at physiological rest. 4. All points in the canal which produce friction during a pathological state of mucous membrane should be regarded as strictures. 5. These strictures are most frequent in the pendulous urethra. 6. Urethrotomy is necessary in nearly all penile urethral contractions. When, however, a stricture is soft and succulent dilatation should be practiced. 7. The frequency of dilatation should vary with the case. Each case is a law unto itself. 8. Electrolysis is not curative in fibrous stricture. It does, however, have a beneficial effect in many cases. This effect is due to its removal of what Dr. Lydston terms the "plus conditions of stricture." These are spasm, and œdema and hyperæmia both active and passive. The galvanic current acts, not by electrolysis, but by, first, relieving spasm; second, by promoting absorption of fluids and young cells not yet transformed into perfectly differentiated tissue. There is, in addition, the mechanical effect of the urethral bulb. 9. Many gleets persist after removal of all points of contraction. These are due to folliculitis (chronic urethral catarrh), or to localized lesions often susceptible of endoscopic detection and treatment. Many times, however, endoscopic exploration is disappointing.

Dr. R. D. MacArthur: I have been very much edified by the paper read, and the ground has been covered so extensively that very little is left for me to say. In reference to electrolysis, I agree with the essayist that it is of little or no value in enlarging the lumen of an ordinary stricture, but it is of some service in removing complications, such as spasm, irritability, œdema,

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congestion, etc. I might say a word in reference to stricture of the meatus, which is probably the most common stricture met with whether congenital or acquired. It produces a great deal of difficulty and is very annoying to surgeons in determining the exact extent of the divisability, as we have no general rule for cutting the strictures at this point. The only rule I find applicable in all cases for meatotomy is free incision of the floor of the urethra, short of complete division. But if you cut through the floor of the urethra you produce a very unsightly deformity which requires surgical interference afterwards, as it also interferes with the function of the organ; if you do not cut it freely you invariably find, upon using a bulbous bougie or whatever instrument you use, that there still remains a band and that the cause for which you have operated is not eliminated, but will require a second division. Hence I say free incision of the floor of the meatus, short of complete division is the only rule in genito-urinary surgery that is applicable to all cases.

Dr. Bayard Holmes: A paper that is so complete and covers the ground so carefully as this has done does not leave much room for discussion, but there is one point which Dr. Lydston has referred to that I believe is worthy of remark. He speaks of stricture as due to urethritis. I think if he were more careful in his language he would say that it is due to peri-urethritis; that the inflammation of the mucous membrane of the urethra itself is not productive of stricture; that it is the inflammation which follows in the surrounding connective tissue which gives rise to a multiplication there, and afterwards cicatricial contraction that really produces the stricture. Of course strictures would not remain and progress were it not for the fact that the inflammatory process in the connective tissue remains as a permanent factor.

The treatment of the stricture depends upon the fact that the process is naturally a progressive peri-urethritis. The treatment of any infected wound that cannot be rendered aseptic is drainage, and this it seems to me is most rationally secured by cutting through all of those connective tissue spaces, of which the contracting bands are the walls. Thus in cutting through the floor of the urethra the connective tissue spaces are opened and drainage takes place into the open wound, and recovery

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from the infection follows and at the same time recovery from the stricture is accomplished. The point is that it is not the cutting of the stricture that does any good, but it is the drainage of the infected connective tissue spaces.

Dr. J. S. NEWBURGH: Dr. Lydston brought out the point that strictures in the anterior urethra are more frequent than in the posterior; but Professor Otis and a great many foreign authorities claim that the majority are in the posterior urethra, and also in the bulb immediately in front of the posterior urethra.

As regards strictures being caused by peri-urethritis, that is not proven. We know that there are certain localities which tend to prolonged urethral inflammation, namely, those at the narrowest portion of the urethra and those immediately behind the meatus, and at the bulbo-membranous junction. Lewis claims that he has, by patient dilatation, removed the obstruction in the majority of cases he has treated. Dr. Lydston claims that if a No. 40 sound is introduced into the urethra there will still be a stricture, but if you use a No. 40 sound with the point of the same caliber as the remaining portion, I believe in the majority of cases no stricture would remain.

As regards the treatment, conservative men prefer dilatation, radical prefer cutting, and some few the use of electricity. But there is no doubt that a majority now agree that all strictures about one inch from the meatus should be cut.

Dr. JOSEPH ZEISLER: I admire Dr. Lydston's paper very much for the original ideas it contains. There are a few points I should like him to take up in closing the discussion. He has considered the genesis of stricture and developed quite a philosophical theory of the manner in which stricture may come about. I wish he had not so entirely ignored the influence which the gonococci may have in the production of stricture. Inasmuch as his explanation of the etiology of stricture is more or less theory, it seems to me worth while to consider that the implantation of gonococci in the deeper tissues might be capable of sufficient irritation to be one of the causes of stricture. I would not lay the whole blame on the gonococci, but considering both the mechanical theory of Dr. Lydston and the theory of infection by gonococci, we might get nearer the truth. Dr. Lydston says the stricture is a band of fibrous tissue, and we will

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grant that this is true in most cases, but the operation which he advocates only cuts this band in one place; we get more space, certainly, by it, but do we remove the fibrous tissue? Have we not afterwards to introduce the sound in order to remove that fibrous tissue by pressure? We see, therefore, that the pressure produced by the sound is of much value in itself. Dr. L. evidently tried to be fair as regards the value of electrolysis, but perhaps if he would use electricity as frequently as some others do in removing fibrous growths on the skin, and see how much can be done to make them melt, so to say, he would understand better that electrolysis may be capable of a distinct electrolytic influence upon the stricture.

Dr. M. L. HARRIS: Strictures in the meatus must be cut. I do not think any one can dilate a stricture in the meatus permanently. Strictures in the pendulous portion can be dilated, but it takes a great deal of patience to dilate a large one. The more strictures I treat, the more I like cutting. I do not agree with Dr. Holmes that the success of cutting is due to drainage; I think if we let it alone after cutting it will still be a stricture, notwithstanding drainage, but dilatation must be kept up until the cut has healed to the full size of the urethra.

Some few years ago I took up electrolysis with considerable enthusiasm; I had a first class apparatus with every appliance for scientifically treating strictures by this method. I could raise a stricture a few numbers, but beyond that I have never been able to dilate a hard stricture; so after several hundred trials I gave up electrolysis as useless in the cure of hard strictures of any part of the urethra.

Dr. D. H. WILLIAMS: Until recently I was of the opinion that impermeable strictures were more in the imagination of the surgeon than a fact, but within the past month I have come across two cases which I am now willing to admit were impermeable, one of which required an operation in order to save the man's life; the other is now under treatment, and I am at my wits' end to know how to finish that case up successfully; I would like some information on the point of the impermeability of strictures.

Dr. G. FRANK LYDSTON, in closing the discussion, said: Dr. MacArthur brought up the question of the proper method of

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division of the meatus. I did not touch upon that, as it was no within the scope of my paper. He stated that there was no definite rule for incision of the meatus, which is a fact, but in a general way we can determine the size of bulb that the meatus will admit, and it should be incised until it admits that bulb freely. If there is a contraction just within the meatus, as is often the case, that should also be incised. In this connection I may mention the troublesome hemorrhage which sometimes results from these apparently simple operations. Last Saturday evening about four o'clock I incised a stricture just within the meatus, first using cocaine; there was very little hemorrhage at the time, but about half-past eleven that night he came to my house; he had bled so profusely at the next effort at urination following the operation, that he had to put a rubber band about the penis to stop the bleeding. I will state also in this connection that since using cocaine I have had a great deal of trouble from hemorrhage from incisions in the front portion of the canal; I had none before using this drug.

Dr. Holmes has given a hair-splitting differentiation between urethritis and peri-urethritis. Peri-urethritis is secondary and simply a complication of urethritis. Even though it is proven that peri-urethritis is at the bottom of the difficulty, I should like to ask why it localizes itself at one particular point. It is a fact that just at the bulbo-membranous portion the worst strictures are found; and if I am not mistaken there is much less peri-urethral tissue at that point than in some other regions of the canal; at that point the urethra is firmly attached to the structures around it. I cannot see the logic of the drainage argument as advanced by Dr. Holmes in explanation of the benefit of urethrotomy. I do not think there is much drainage of the tissue, even if kept open, after coagulable lymph has had a chance to form over the surface. The benefit is due to the division of constricting bands, and securing rest by relieving friction and the formation of a wedge of new tissue, the stricture being kept apart by dilatation until it is healed. I do not think the gonococcus has anything to do with the question of localization. Something must determine the concentration of the gonococci, and that, I claim, is friction. In reference to the galvanic current and its electrolytic action on morbid tissue, I

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acknowledge its power providing circumstances are favorable, but I do not think it is practicable to bring this electrolytic action to bear on the structure of strictures. I notice that Newman uses a very mild current; we can imagine the effect of a very mild current of galvanism diffused through a bulb larger than the end of my finger as compared with a little needle passed into the living tissue with an immensely more powerful current. One gentleman asked me what I meant by impermeable stricture. Of course we understand that there is such a thing as absolute impermeability, that is very rare and usually traumatic. As long as a drop of urine can be forced through the stricture it is permeable to fluid, and will usually admit an instrument. I claim that in a large proportion of cases in which the surgeon fails to get through, he has been too rough or lacked patience or he has been too enthusiastic over the more or less immediate possibility of a urethrotomy.

Dr. A. H. Burr read a paper entitled "A Contribution to the Treatment of Gleet," and exhibited an instrument. (See page 536.)

Dr. Junius C. Hoag: I would like to inquire of the essayist whether he is familiar with an instrument devised by Ultzman for the purpose of dilating the urethra simultaneously with its flushing, and whether he has used the instrument, and what he can say about it.

Dr. G. Frank Lydston: The line of treatment laid down by Dr. Burr is so nearly in accord with what I have believed to be the proper method of treatment of cases of gleet that I have little to say except to indorse it. I have found, however, that while the use of ointments is reliable in perhaps the majority of cases in which the gleet is not due to stricture—for the removal of stricture is the key-note of the removal of gleet,—it is often necessary to make use of other medicaments to obtain the desired result. For the detection as well as treatment of some of the gross lesions, the endoscopic tube is often valuable, but as a means of inspection it is sometimes disappointing. I wish Dr. Burr had given more importance to the removal of points of contraction in the canal as preparatory perhaps to the treatment; not that I claim that removal of stricture will always cure gleet, because it does not do so in a large proportion of cases; in some

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cases, even after the removal of obstructions, the gleet persists. In the treatment of gleet, if after the prolonged use of astringents the membrane has become very tough and resistent to medicaments, I have found it useful to excite subacute or acute inflammation by prolonged irritation with quite strong antiseptic solutions. I have found very useful in the treatment of gleet the pure fluid extract of hamamelis; this can be applied in full strength and is not painful. It is singular that the pure fluid extract can be applied by the way endoscope, while I have found a strength of one in four by ordinary injection be so painful that I could not continue its use. Where actual lesions can be discovered by the endoscope, treatment should be directed to the affected spots.

Dr. EDWIN PYNCHON: I understood Dr. Burr to say that his usual custom is to first pass the sound, then request the patient to urinate, and after this to introduce the ointment. It would seem to me better practice to request the patient to urinate before introducing the sound. One of the most prominent indications in the treatment of these cases is cleanliness secured by the use of an injection after each urination, which injection need not necessarily be medicated, as plain water will do quite well and will materially add to the comfort of the patient. I have several times had my attention called to this fact when patients, through detention by business or while on a trip, were prevented from using an injection after each urination and were made worse thereby. I have been in the habit of prescribing as an injection in the treatment of gleet something very simple, and which at the same time has proven very beneficial, and that is the elixir of vitriol (acid sulph. aromat.) in water. My custom has been to prescribe an ounce of the elixir and direct the patient to add five drops to a half-glass of water, then fill the syringe and inject it with some force back into the glass, repeating two or three times to insure a perfect admixture, and then to inject eight or ten syringes full after each urination. Such treatment with the introduction of sounds in properly selected cases will generally relieve the condition.

Dr. BAUM: We have used in Europe during the past three years an instrument somewhat similar in construction to the one Dr. Burr has shown. At the Berlin clinic we have used strong

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ointments, but I do not think they will be so much used in the future. Dr. Lydston has much belittled the use of the endoscope. It requires long practice. I had been some six months in Vienna before I could find any of those small pin-head granulations, but I must say I have been able to diagnose such cases. In regard to treatment, I have had the most favorable results from the use of sulphate of copper applied through the endoscope, and also nitrate of silver in strong concentrated solution by means of a syringe. I have also had excellent results from a strong injection resorcin; otherwise I think the treatment is in connection with the stricture. I do not believe, however, that all cases of gleet are intimately connected with stricture, because I have seen cases of ten years standing in which there was no evidence of stricture but which seemed to consist of an exudation coming from some enlarged glands along the urethral tract, and which seemed only to be excited into the formation of pus during such time as the man was living in a dissipated way.

Dr. A. H. Burr, in closing the discussion, said: Replying to the inquiry in regard to an instrument for dilating and flushing the urethra, I would say that I have not had much experience with it. Probably one of the best sounds for the application of ointment is Dr. Rhodes' of Philadelphia; it consists of an elongated bulb about three inches in length, deeply grooved on four sides and slipped over a small sound; this acts as a dilator and the grooves filled with ointment are left in position for ten or twenty minutes. This ointment certainly is not set forth as a cure-all for gleet, neither are any of the formulæ which I have passed round. All that I claim in the syringe is the ability to place the medicine where we want it and in such a consistency that it will be more like a soft or flexible suppository. In regard to injecting the bladder, I would not want to put a stiff ointment in it. I think Dr. Pynchon's suggestion, that the patient should urinate before the sound is passed, is a good one. I should be governed in my selection of appropriate medicaments by the conditions I found: if an old chronic condition with granulations I should want to use nitrate of silver as a stimulating ointment; and if only a hyperemia of the canal without much organic structure in the way of thickened bands I should use some of the astringents, ointments, or the iodoform ointment.

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Dr. J. C. CULBERTSON, editor of *The Journal of the American Medical Association*, was presented to the Society.

Dr. G. W. WEBSTER read a paper on "The Use of the Galvanic Battery in Laryngology, with Report of Cases." (See page 509.)

On the motion of Dr. ARCHIBALD CHURCH, the Executive Committee was instructed to find a suitable room in the vicinity of the Grand Pacific Hotel for holding the meetings of the Society. The committee was instructed to report at the next meeting.

Dr. LYMAN WARE moved that a committee of three, to be appointed by the President, be instructed to wait upon the Mayor and the Real Estate Board for the purpose of securing legislation to prevent the erection of high buildings at the expense of light, air and health. Drs. LYMAN WARE, H. N. MOYER and G. W. WEBSTER were appointed as such committee.

On the motion the Society adjourned.

J. C. HOAG, *Secretary.*

COOK COUNTY HOSPITAL CLINICAL SOCIETY.

Regular Meeting, July 2d, 1891.

Dr. J. S. CUTLER, Chief of Internes, in the chair.

After the routine business and presentation of specimens, Dr. ADOLPH GEHRMANN read a paper on "Compound Fractures" (see page 514), and Dr. A. R. EDWARDS presented the reports of "Compound Skull Fractures." (See page 539.)

The paper of Dr. GEHRMANN was discussed by Drs. RICHARDSON, HALSTED, CUTLER, WEST, WEAVER, WITTWER and COURTNEY. The concensus of opinion of the various gentlemen being that meddlesome surgery should be avoided, though every case demanded operative intervention; that is, as far as practicable, the wound should be made a simple incised wound, thoroughly cleansed and drained; that drainage by antiseptic gauze was more efficient than by tubing; that capillary drainage was almost equally free in all positions of the limb and was not occluded by blood clot, generally prevented the pocketing of pus and avoided the necrosis that invariably occurs in the line of the drainage tube.

A. B. KEYES, *Secretary.*

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Reviews.

LECTURES ON TUMORS, from a Clinical Standpoint. By JOHN B. HAMILTON, M.D., LL.D., Professor of Principles of Surgery and Clinical Surgery, Rush Medical College, Chicago, etc. Detroit: Geo. S. Davis, 1891. 12mo., pp. 138. 25 cents.

Practical talks for students, based on personal clinical experience mainly.

PRACTICAL INTESTINAL SURGERY. By FRED. B. ROBINSON, B.S., M.D., Professor of Anatomy and Clinical Surgery, Toledo Medical College. Vol. I. Detroit: Geo. S. Davis, 1891. 12mo., pp. 172. 25 cents.

A readable resumé of intestinal surgery, dedicated to Professor Senn. It includes the results of painstaking original experimentation and numerous practical deductions.

THE FIRE PROTECTION OF HOSPITALS FOR THE INSANE. By L. H. PRINCE, M.D. Chicago: C. H. Blakely & Co., 1891. 8vo., pp. 122.

Any one who is at all familiar with the fire danger of hospitals for the insane will welcome this extremely practical and valuable little work, which is equally applicable to other hospitals and similar institutions. The personal experience of the author and his clear comprehension of the subject, are manifest on every page. It is most cordially recommended to all interested in hospital construction and management.

MEDICAL DIAGNOSIS, with Special Reference to Practical Medicine. A guide to the knowledge and discrimination of diseases. By J. M. DA COSTA, M.D., LL.D. Illustrated. Seventh Edition Revised. Philadelphia: J. B. Lippincott Company. Chicago: W. T. Keener, 1890. 8vo., pp. 996. Cloth, $6.00.

Perhaps no one book has given students of medicine so much satisfaction as this work of Professor Da Costa's. Its value and

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popularity have carried it through seven large editions. It has also been honored by a Russian and German edition, and a French translation is forthcoming. The practical arrangement and treatment of the various subjects and parallel schemes of differential diagnosis make it very acceptable to those for whom it is mainly written. The present edition has only a little to offer on bacteriological features of disease, but such as is put forward is clear and available.

A Clinical Text-Book of Physical Diagnosis, for Physicians and Students. By Oswald Vierordt, M.D., Professor of Medicine at the University of Heidelberg, etc. Authorized translation from the second improved and enlarged German edition, with additions by Francis H. Stuart, A.M., M.D. One hundred and seventy-eight illustrations. Philadelphia: W. B. Saunders, 1891. Chicago: W. T. Keener. 8vo., pp. 700. Cloth, $4.00.

A translation, to be acceptable, must have at least two good points; first, the subject matter should be of an exceptionally valuable character, and second, that matter should appear in a garb free from the idiom and peculiarities of the original. There is no sufficient reason for an English translator to free himself from the most ordinary rules of his own language and entangle his reader in the mazes of a German sentence. As to subject-matter, there is very little in this book which was not already available, and as to English, the less said the better. Except for the advanced student the book would be useless, as it takes for granted much that is essential to a text-book for beginners, but for the practitioner, as a book of reference, it has a value which is distinctly enhanced by an index of one hundred pages. The examination of the abdominal organs is particularly thorough, with minute directions for investigation of the stomach contents, vomit, alvine dejections and urine in health and disease. Its cheap price and excellent form are commendable, and the many colored illustrations of pathogenic microbes are excellent.

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News Items.

Dr. DANIEL R. BROWER has gone to the Yellowstone for his summer outing.

Dr. H. B. WILLIAMS has removed his office to Suite 51, Mentor Building, 163 State street.

Dr. E. J. DOERING sails for Europe August 11th, on the steamer *Havel*, to be gone until October 1st.

Dr. J. P. CROZER GRIFFITH has been elected Clinical Professor of the Diseases of Children in the University of Pennsylvania.

Dr. H. H. FROTHINGHAM was married to Miss Clara Morgan July 23d, at the residence of the bride's parents, 5200 South Park avenue.

Dr. CLEMENT VENN has removed to 270 East North avenue, corner of Larrabee street. Hours, 1 to 3 and 7 to 9 P. M. Telephone 3097.

Dr. VICTOR C. VAUGHAN is made Dean of the Faculty of Medicine in the University of Michigan, in succession to Dr. Ford who has resigned.

Massachusetts now has a law under which inmates of charitable and penal institutions suffering from syphilis may be isolated and detained, if necessary, for treatment.

The Commissioner of Pensions has appointed Dr. CHARLES W. CRARY, of Kenwood, a homeopath, to succeed Dr. Miller, deceased, as Pension Examiner at Chicago.

The Medical Council of the College of Physicians and Surgeons of Ontario has decided that after July, 1892, every student must spend five years in actual professional studies.

Dr. W. S. CHRISTOPHER has resigned the chair of Theory and Practice of Medicine in the University of Michigan to take the chair of Diseases of Children in the Chicago Policlinic.

Dr. JOSEPH O'DWYER and Dr. F. PEYRE PORCHER have been honored by the degree of Doctor of Laws by St. John's College, Fordham, and the University of South Carolina, respectively.

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It is stated by telegram that Professor BERGMANN and Dr. HAHN have been ordered to answer within twenty-four hours the charges of having inoculated pauper patients with cancerous matter.

The Trustees of the Fiske Fund have awarded a prize of three hundred dollars to Dr. ROBERT W. LOVETT, of Boston, for an essay on "The Etiology, Pathology, and Treatment of the Diseases of the Hip-joint."

The petition to Governor FIFER recommending the re-appointment of Dr. RAUCH as a member of the Board of Health, has been very generally signed by the profession in the city and throughout the entire state.

Dr. HENRY P. NEWMAN has removed to his recently completed residence, 492 West Adams street. Telephone 7199. Hours, until 8 A. M., and from 6 to 7 P. M.; at 65 Randolph street, from 1 to 3 P. M.; telephone 2558.

Dr. GEORGE DOCK, formerly of Philadelphia, and for three years Professor of Pathology in the Texas Medical College, at Galveston, has been elected Professor of the Practice of Medicine in the University of Michigan, at Ann Arbor.

The students of Rush Medical College, under the sanction of the Faculty, publish monthly during the college year, eight months, a very creditable little journal devoted to college interests, the Alumni and the undergraduates. It is called *The Corpuscle.*

It has been proposed by the friends and pupils of the late MATTHEWS DUNCAN to perpetuate the memory of the great obstetrician by founding at St. Bartholomew's Hospital a Matthews-Duncan medal or prize in obstetrics or gynecology, and the erection of a bust, to cost from six thousand to seven thousand dollars.

Professor KOCH has resigned all the public offices held by him. This step is associated with supposed disappointment over the unsatisfactory results of his discovery of "tuberculin." The Academic Senate will bestow an honorary office upon him, permitting him to lecture whenever he chooses.—*Chicago Tribune*, July 24th. It is reported that another government position is to be created for him in connection with the study of contagious diseases generally.

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An appeal is made in the *Berliner klinische Wochenschrift* for funds for the restoration of the monument over the grave of the famous Arabian physician, AVICENNA. Dr. Albu, who has recently returned from Persia, where he has been studying mountain fever, reports that the grave is in an utterly neglected state. Contributions may be sent to the German Ambassador at Teheran.

Dr. KIDD, the homeopath who attended Lord Beaconsfield in his last illness, has been in charge of the case of the Rev. Chas. H. Spurgeon. In the former instance Sir William Jenner refused to consult with him, and in the present instance Sir Andrew Clark has declined to meet him. The lay press attribute this to jealousy, not appearing to comprehend that no satisfactory consultation is possible under the circumstances.

It is stated that application has been made to President Harrison for the appointment of a commission to visit the abandoned army posts in Southern Colorado and Northern New Mexico, with the view of selecting the best site for a National Retreat for Consumptives. The climate of these regions is believed by some of the authorities to be the most favourable within the area of the United States for persons suffering from lung disease.

The Cook County Commissioners have appointed two Advisory Boards, one on Insane Asylum and Poor House and the other on County and Detention Hospital and Jail. These boards are made up from representative citizens, with powers of inspection at all times, and it is promised that their recommendations shall receive full consideration. Dr. Archibald Church and Dr. E. Fletcher Ingals, respectively, represent the medical profession on these Boards.

A literary course for students of medicine is furnished at the University of Wisconsin, the University of Pennsylvania, the Johns Hopkins University, the University of Notre Dame, Yale University, Cornell, Princeton, Lake Forest, Northwestern, West Virginia and the University of Kansas. The Illinois State Board recognizes this course as equivalent to two years' study and one course of medical lectures, enabling the student to enter the second year class of medical colleges where the curriculum corresponds to their requirements.

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Professor LANNELONGUE, July 7th, described his new treatment of localized tuberculosis before the Paris Academy of Medicine. His plan is to inject the chloride of zinc about the tuberculous focus, producing a sclerosed tissue, which may strangulate and encapsule the disease and the bacilli. He calls it the "sclerogenous method," and reports good results in twenty-two cases, of which twenty were the subjects of osteoarthritis or tubercular adenitis, and two of pulmonary tuberculosis. All were under the age of fifteen years, and have only been under observation a year at the longest.

A field of journalism hitherto unfilled in this country is about to be occupied by *The Climatologist*, published by Saunders, of Philadelphia, and edited by JOHN M. KEATING, FREDERICK A. PACKARD, CHARLES F. GARDINER, and a score of associates in all parts of the United States and Canada. Its object is to promote investigation and broaden knowledge of all matters relating to climatology, mineral springs, diet, preventive medicine, race, occupation, sanitary science, etc. It is pledged to a high scientific character which is abundantly assured by the editorial *personnel*. The first number is to appear in August as a monthly at two dollars a year.

Dr. A. H. PARKER, of this city, has won his case in the Appellate Court of Illinois. It may be recalled that he was sued by a patient under the mal-practice act because an abscess had formed which the patient attributed to the truss fitted and applied by Dr. Parker for an incomplete hernia, the existence of which was afterward denied by the plaintiff, though he had worn a truss for six years before seeing the defendant. It was clearly shown by competent medical testimony that the abscess was not in any way the result of the truss pressure, and a judgment was rendered for the defendant in the Circuit Court of Cook County, Judge Baker, which is now affirmed by the higher court, having been appealed by plaintiff. Judge Moran, after reciting the evidence, concludes: "Proof that he (the doctor) was mistaken as to the existence of a rupture, or that the abscess was caused by the pressure of the truss, was not enough to entitle plaintiff to a verdict. Proof of a bad result or of a mishap is of itself no evidence of negligence or lack of skill. The defendant is qualified to practice medicine and surgery, and the evidence of the

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experts in his profession shows him competent and skillful Before a recovery could be had against him it must be shown that his treatment was improper or negligent, not merely that he was mistaken, or that his treatment resulted injuriously to plaintiff. A physician or surgeon, or one who holds himself as such, is only bound to exercise ordinary skill and care in the treatment of a given case, and in order to hold him liable, it must be shown that he failed to exercise such skill or care."

Dr. O. P. BENNETT, of 293 West Van Buren street, makes the following statement regarding his censure by a Coroner's jury: "I was called at 1 o'clock Thursday morning, July 16th. I found that Mrs. Blood had taken poison at 11:30 o'clock Wednesday night and was in great pain. I gave the usual remedies and worked over her an hour and a half. When I left she was, in my opinion, on the road to recovery. At 4 o'clock I was called by Mrs. Hundron. I asked if Mrs. Blood was worse, and she said no, that she was in pain, and asked me to go over. I had been up all the previous night and was tired. I said: 'I can give you some medicine to relieve the pain, and if you find later on that my presence is needed do not hesitate to call me.' I was called again at 6 A. M., and found Mrs. Blood was worse. She died shortly after my arrival. I did not neglect my duty." Mrs. J. F. Hundron corroborated Dr. Bennett's statement, and said he had done all in his power to aid the sick woman. J. W. Brown, who served on the Coroner's jury, said: "The verdict was certainly not in accordance with the testimony. I fought against it, but was only one against five and had to give in. Dr. Bennett did not testify until after the verdict was rendered. I distinctly heard the Coroner say to his clerk: 'Get that verdict down before the doctor comes.' That I will swear to and you can publish it over my signature. I spoke with Mr. Blood, the husband of the dead woman, and he believed Dr. Bennett had been faithful in the performance of his duty, and was entirely satisfied with his treatment of the case." Deputy Coroner Clements had charge of the inquest and should be investigated.

An arbitration committee has been in session at the Sherman House, Chicago, to hear evidence in a suit for twenty thousand dollars against Dr. F. C. HOTZ. The arbitrators were Drs. JOHN B. HAMILTON, TRUMAN W. MILLER and GEO. KRIEGER, and it was

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agreed by plaintiff and defendant that the decision of the arbitrators, or any two of them, should be absolutely binding and settle this case for all time. It was claimed that the plaintiff, a girl thirteen years of age, when three years ago she went to Dr. Hotz, was suffering from an interstitial keratitis of the left eye as the result of hereditary syphilis; that while under his treatment the nose became affected; that Dr. Hotz did not recognize the syphilitic nature of the malady, and consequently did not employ the proper remedies; and that, therefore, he is responsible for the ravages of the disease in the nose and mouth (destruction of septum and perforation of hard palate). But Dr. Hotz easily proved that he recognized and treated the disease as syphilitic from the first day; that the nasal septum was partly destroyed when he first examined the nose; and that under his treatment the syphilitic ulcerations always healed readily. As to the charge that a more heroic treatment would have prevented a recurrence of the disease, Dr. H. could not only prove by experts that hereditary syphilis is apt to recur after any mode of treatment, but also that the plaintiff now shows fresh syphilitic ulcerations, although a few months ago she had been submitted by her present physician to a very heroic course of inunctions and large doses of potassium iodide. The prosecution failed to sustain their charges and the board of arbitrators unanimously decided for the defendant.

There has lately seemed to be an epidemic of legal malpractice activity in Chicago, and it is trusted that the ruling in the several cases mentioned herein may have a wholesome influence on those who stand ready to demand a physician's instant attention in an emergency and equally ready to prosecute him in the event of a failure on the part of the patient to secure an absolute recovery. Attention is particularly called to the decision of Judge Moran above quoted, in the case of Sims *vs.* Parker, which reiterates the fact that only ordinary skill can be exacted, and takes the broader ground that a failure in diagnosis or a bad result are not *per se* evidence of negligence.

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REPORT OF THE CHICAGO HEALTH OFFICE.

For July, 1891.

Population, 1,200,000.

DEATHS.		DEATHS—Continued.	
Measles	23	Bronchitis	29
Scarlet Fever	21	Capillary Bronchitis	19
Diphtheria	39	Pleurisy	5
Pertussis	20	Congestion of Lungs	1
Typhoid Fever	200	Phthisis Pulmonalis	164
Influenza	0	Violence	102
Pneumonia	87	Suicide	12
Children under five years of age			1302
Total deaths from all causes			2275
Ratio per thousand of population			22.75

CASES REPORTED.

Diphtheria	67
Scarlet Fever	185

METEOROLOGICAL SUMMARY.

For July, 1891.

MEAN BAROMETER	30.016
Highest Barometer, July 9	30.273
Lowest Barometer, July 29	29.798
MEAN TEMPERATURE	67.0
Highest Temperature, July 12	87
Lowest Temperature, July 1 to 5	55
Greatest daily range of Temperature, July 12	22
Least daily range of Temperature, July 30	4
Total deficiency in temperature during month	166
Total deficiency in temperature since January 1st	72
Prevailing direction of wind	S. W.
Total movement of wind, miles	9,670
Extreme velocity of wind, direction, July 2	50; N.E.
TOTAL PRECIPITATION ..... inches	2.47
Number of days on which .01 inch or more of precipitation fell	8
Number of cloudless days	13
Number of partly cloudy days	13
Number of cloudy days	5

H. C. Frankenfield,

Observer.

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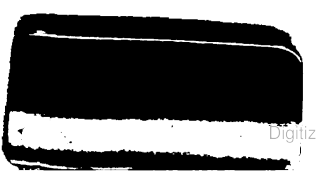

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